THE IMPACT OF AI TOOLS LIKE CHATGPT ON THE EVOLUTION OF EDITORIAL ROLES IN DIGITAL MAGAZINES

Internship Report presented to Universidade Católica Portuguesa to obtain a Master's Degree in Communication Sciences - Media and Entertainment

By

Clémence Jeanne Marie Pasteur

Faculty of Human Sciences

July 2024

UNIVERSIDADE CATÓLICA PORTUGUESA

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Resumo – O Impacto de Ferramentas de IA como o ChatGPT no Desenvolvimento do Papel dos Editores em Revistas Digitais

A inteligência artificial introduziu ferramentas poderosas como o ChatGPT, um sistema de processamento de linguagem natural que possibilita conversas semelhantes às humanas e a realização de diversas tarefas de escrita. No entanto, essa inovação causou preocupação social, com investigadores e indivíduos a expressarem preocupação sobre o seu impacto potencial no mercado de trabalho. Tendo por base uma experiência de estágio na revista digital XOXO Fashion Magazine na área de redação, este estudo procura explorar o papel dos editores e os possíveis efeitos dessa tecnologia na sua profissão. Especificamente, a pesquisa examina como ferramentas de IA como o ChatGPT podem afetar os papéis dos editores na XOXO Fashion Magazine. Para determinar os impactos potenciais, quatro editores e quatro redatores foram entrevistados utilizando uma abordagem de pesquisa qualitativa (entrevistas semiestruturadas). A investigação procurou compreender se eles utilisavam o ChatGPT ou outras ferramentas de IA, que perspectivas têm sobre tais tecnologias e têm percepção sobre um risco de substituição de empregos. As perspectivas dos redatores foram consideradas para avaliar se a adoção da tecnologia por parte deles poderia acelerar a substituição dos papéis dos editores. Os resultados revelaram que nenhum dos redatores e editores atualmente utiliza o ChatGPT na revista. Consequentemente, parece que as posições dos editores permanecem seguras por enquanto. No entanto, tanto redatores quanto editores reconheceram que o ChatGPT poderia potencialmente substituí-los no futuro. Apesar da importância percebida e da preferência por editores humanos, foi observado que o ChatGPT pode replicar as suas capacidades e realizar tarefas de edição, que são as responsabilidades principais na XOXO Fashion Magazine. De fato, foi reconhecido que pode ser apenas uma questão de tempo até que o ChatGPT supere os editores em proficiência. Portanto, estratégias de relação, como evitar ou adotar a tecnologia, foram exploradas. Esta pesquisa procurou dar destaque aos editores, proporcionando-lhes uma plataforma para a articulação das suas preocupações e opiniões sobre tais ferramentas. Ao fazer isso, não só deu lhes voz, mas também sublinhou a importância de seu papel na revista, que tem sido sub-representado na literatura.

Palavras-chave: IA, ChatGPT, revista digital, editores, substituição de empregos

Abstract – The Impact of AI tools like ChatGPT on the Evolution of Editorial Roles in Digital Magazines

Artificial intelligence has introduced powerful tools like ChatGPT, a natural language processing system that enables human-like conversations and completion of numerous writing tasks. However, this innovation has sparked societal concerns, with researchers and individuals expressing apprehensions about its potential impact on the job market. Motivated by an internship experience at the digital magazine XOXO Fashion Magazine as a writer, this study aims to explore the role of editors and the potential effects of such technology on their profession. Specifically, the inquiry focuses on how AI tools like ChatGPT may affect editors' roles at XOXO Fashion Magazine. To ascertain potential impacts, four editors and four writers were interviewed using a qualitative research approach (semi-structured interviews). The investigation sought to understand whether they personally utilize ChatGPT or other AI tools, their perspectives on such technologies, and whether they perceive a risk of job displacement. Writers' perspectives were considered to assess if their adoption of the technology could hasten the replacement of editors' roles. Findings revealed that none of the writers and editors currently utilize ChatGPT at the magazine. Consequently, it appears that editors' positions remain secure for the time being. However, both writers and editors acknowledged that ChatGPT could potentially replace them in the future. Despite the perceived importance and preference for human editors, it was noted that ChatGPT can replicate their capabilities and perform editing tasks, which are primary responsibilities at XOXO Fashion Magazine. Indeed, it was recognized that it may only be a matter of time before ChatGPT surpasses editors in proficiency. Therefore, coping strategies, such as avoidance or embracing the technology, were explored. This research aimed to spotlight editors by providing them with a platform to articulate their concerns and opinions about such tools. In doing so, it not only empowered their voices but also underscored the significance of their role in the magazine, which has been underrepresented in literature.

Key words: AI, ChatGPT, digital magazine, editors, job displacement

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Introduction

Recently, there has been growing apprehension regarding the advancement of Artificial Intelligence (AI). This concern arises from the continuous enhancements, emerging capabilities, and the potential impact of AI on the job market. AI, or "Artificial Intelligence," encompasses the capability to replicate human cognitive functions (McKinsey & Company, 2023). It involves the imitation or replication of human intellect in machines, particularly in computers, such as in LISP (a programming language for list processing), self-driving cars, speech recognition software, chatbots, Roomba (an autonomous robotic vacuum cleaner), humanoid robots like those developed by Hanson Robotics, rovers, Xbox 360 Kinect (interactive game), the NLP computer Watson, virtual assistants like Siri and Alexa, and more. The roots of AI trace back to the 1950s when researchers began studying human brain functions, aiming to model these in mathematical constructs (McCulloch et al., 1956). The attribution of AI can be linked to the work of Alan Turing whose goal was to simulate brain functions in machines with self-improvement capabilities, a concept proposed at the 1956 Dartmouth Conference where he called it the "child machine" (Hall, 2007). Since then, significant advances such as machine learning, neural networks, and natural language processing have led to the creation of self-learning machines. Chatbots, which use natural language to simulate human conversation, emerged from these advances, leading to the development of ChatGPT.

Created by OpenAI, ChatGPT is a language model designed to engage in human-like interactions, offering assistance, answering questions, and generating content such as essays, books, code, poetry, and other written tasks (Ortiz, 2023). It is particularly impressive because, unlike previous chatbots, it can recall conversations, provide vast amounts of information, and respond to user inquiries with helpful and accurate responses, enabling endless dialogue (Haque, 2023). While AI has been present in society for decades, the emergence of ChatGPT in 2022 has raised significant concerns. Its capabilities have exceeded expectations, evidenced by its ability to compose an entire theater play, answer medical licensing exams, and pass the bar exam (Thorp, 2023; Gilson et al., 2023; Katz et al., 2023). These advancements, particularly in ChatGPT's capabilities, have spurred apprehensions regarding its potential impact on employment, particularly within journalism. According to Taecharungroj et al. (2023), ChatGPT is particularly adept at creative writing, essay writing, prompt writing, code writing, and answering questions, which are relevant tasks in journalism. Research have estimated that

by 2025, AI bots could be responsible for writing 90% of news articles (Wharton, 2019). Additionally, media outlets have already begun using technologies like ChatGPT and chatbots to their benefit, reinforcing fears of being replaced later (Noain-Sanchez, 2022; Zorina & Osipovskaya, 2021; Fanta, 2017).

Therefore, the central focus of this study lies in examining how ChatGPT will impact the journalism industry, with a specific emphasis on roles such as web content writers, editors, and web magazines in general. This impact can unfold in various ways. Journalists and media organizations might choose to fully embrace ChatGPT as a means to increase content production, improve time management, and provide economic benefits to media outlets facing financial crises. However, this adoption carries the risk of potential job displacement down the line. Alternatively, they may adopt a half-embrace approach, involving ChatGPT in daily tasks while retaining control over more relevant and important matters, thus promoting the concept of co-working or division of labor. On the other hand, there's the possibility of complete avoidance due to fear of eventual job displacement.

Consequently, this research aims to investigate AI integration within the journalism industry, particularly whether editors, content writers, and individuals working in magazines, like XOXO Fashion Magazine, are using ChatGPT and whether they perceive it as an opportunity to further their career or as a potential threat. The study seeks to specifically focus on editors' roles, which have been lacking research. The study stands out by specifically examining ChatGPT, a controversial AI tool in recent years, and investigating how editors view its usage, especially in a digital magazine like XOXO Fashion Magazine. By providing editors with a platform to voice their concerns and opinions about such tools, this research not only empowers their voice but also underscores the importance of their role in a magazine. Additionally, it aims to provide a deeper understanding of the editing landscape and fill a gap in the existing literature.

The main question that this research seeks to answer is how AI tools like ChatGPT may impact editors' jobs at XOXO Fashion Magazine. The study aims to address this question by focusing on three key points: exploring editors' perceptions toward the use of AI tools like ChatGPT in editing and proofreading, understanding editors' views on the benefits and challenges of using ChatGPT for editing and proofreading, as well as assessing their understanding of these tools for the future and the sake of their profession. To address this qualitative approach, semi-structured interviews were conducted with four editors from XOXO Fashion Magazine, alongside interviews with four writers from the same company. These

interviews aimed to explore the perspectives of both editors and writers on the editor's role in the magazine and the effectiveness of AI tools like ChatGPT in editing tasks. By comparing these viewpoints, the study sought to determine whether editors might be at risk if writers begin using ChatGPT as editing tools. Additionally, the study interviewed writers to understand whether they use AI tools like ChatGPT more than editors, perceive these tools more positively, and believe they could potentially replace editors in the magazine. Questions also delved into the comparison of roles between writers and editors and how professionals perceive their roles in this context.

The research began by thoroughly exploring theories on the background, usage, benefits, and challenges of AI and ChatGPT, which were organized in the first chapter of the study. The subsequent chapter linked AI to journalism, establishing a connection known as "automated journalism," which encompasses any technology used to produce news stories with minimal external influence (Moravec et al., 2020). This chapter delved into themes such as AI's presence in journalism, its benefits, audience and journalist perspectives, and the role of editors, providing a foundational knowledge base for the research. Additionally, this chapter explored ChatGPT's use in editing, as well as two similar studies relevant to this research. In Chapter 3, my personal experience at XOXO Fashion Magazine as a writer was explored, along with my personal use of ChatGPT. This section also provided insights into the roles of editors and explained the motivation behind pursuing this research. Chapter 4 elaborated on the research methodology, detailing the approach taken. Chapter 5, divided into two sections, presented the results of interviews with editors and writers regarding their roles in the magazine, perspectives on AI and ChatGPT, usage of these tools, their advantages, disadvantages, and whether they believe these tools could potentially replace them. In the conclusion, the question of how AI tools like ChatGPT may impact editors' jobs at XOXO Fashion Magazine was addressed and analyzed based on the established data.

Part I – Theoretical framework

Chapter 1- A ChatGPT Overview

1.1. Background: AI & GPTs

AI or “Artificial Intelligence” has been a part of our lives since the 20th century. It refers to the ability of machines to mimic or enhance human thinking and intelligence (Krittanawong et al. 2017). The concept of AI was further articulated in the Dartmouth Conference preparatory document by McCarthy et al. (1955), aiming to make “a machine behave in ways that would be called intelligent if a human were so behaving” (McCarthy et al. 1955). This marks the beginning of AI as the simulation of human intellect in machines, especially computers, tracing back to its early days. The origin of AI is debated among scholars. John McCarthy first introduced the term at the 1956 Dartmouth Conference, which has since been recognized by historians and computer scientists as the official "birthplace" of AI as noted by Kline (2011). However, some authors trace its roots back to even earlier events. For instance, the author Bruderer (2016) believes AI to beat the source of the 1951 Paris International Computer Conference, organized by the Centre National de la Recherche Scientifique (CNRS). The conference, titled "Les machines à calculer et la pensée humaine" ("Calculating Machines and Human Thought"), presented a significant volume of proceedings (589 pages) published only in French, lacking English translations, which may explain its lesser-known status. At this conference, the Spanish engineer Gonzales Torres Quevedo showcased his father’s chess machine, El ajedrecista, further illustrating the conference's role in combining computing machines with human cognitive processes (Bruderer, 2016). Therefore, the author is rather doubtful that the Dartmouth Summer Research Project on Artificial Intelligence, led by John McCarthy, Marvin L. Minsky, Nathaniel Rochester, and Claude E. Shannon in 1956 at Dartmouth College in Hanover, New Hampshire, really was the first major milestone for AI.

The authors Haenlein et. al (2019) acknowledge the difficulty in pinpointing the roots of AI but suggest its origins be traced back to 1942 with the publication of Isaac Asimov's science fiction short story "Run around". This story introduced the concept of a robot, created by engineers Gregory Powell and Mike Donovan, that operates under the Three Laws of Robotics: (1) a robot may not injure a human being or, through inaction, allow a human being to come to harm; (2) a robot must obey orders given by humans unless those orders conflict with the First Law; and (3) a robot must protect its own existence as long as such protection

does not conflict with the First or Second Law (Haenlein et al. 2019). Asimov's vision and work inspired generations of scientists in the field of robotics, AI, and computer science—among others the American cognitive scientist Marvin Minsky, who later co-founded the MIT AI laboratory in 1958. On a less fictive note, authors like Kaul et al. (2020) attributed the concept of AI to Alan Turing's work when he introduced the theoretical computing machine in 1950.

Turing was an English mathematician who was considered the pioneer of the idea of "modelling a brain", and he attempted to address the question of how much a machine could accomplish in relation to higher brain functions. His answers are considered the first manifesto of AI (Guo, 2015). In his seminal article titled "Computing Machinery and Intelligence," Turing described how to create intelligent machines and proposed a test, later known as the "Turing test," to assess whether computers were capable of human-like intelligence (Kaul et al., 2020). The author Adlassnig (2002) supported the idea that the term "AI" is defined by applying the concept of "intelligent behavior" from the Imitation Game introduced by Alan Turing in 1950. In this game, described by Luger et al. (2017), a human, acting as the 'interrogator,' poses questions to two entities: one human and the other a computer. The interrogator is unaware of which entity is human and which is the computer. If the interrogator cannot discern which is which, Turing argues that the computer can be considered as 'thinking' or, more directly, possessing intelligence (Luger et al., 2017). Therefore, a machine is said to exhibit intelligent behavior when its responses to questions are indistinguishable from the responses of a human being. Consequently, only artifacts that convincingly replicate humanlike qualities are recognized as AI (Adlassnig, 2002). This research serves as a benchmark for assessing the intelligence of artificial systems.

However, it wasn't until six years later that John McCarthy was historically credited for using the term "artificial intelligence" (AI) during the Dartmouth Conference, where he defined it as "the science and engineering of making intelligent machines" (Moor, 2006). In August 1955, J. McCarthy (Dartmouth College, New Hampshire), M.L. Minsky (Harvard University), N. Rochester (I.B.M. Corporation), and C.E. Shannon (Bell Telephone Laboratories) proposed a meeting to a group of researchers, scheduled for the summer of 1956, to exchange ideas on simulating various aspects of learning and intelligence in machines (Fernández-Caballero, 2009). This meeting aimed to examine ‘‘the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it,’’ as stated in their preparatory document (McCarthy et al. 1955).

Consequently, the two-month workshop held in the summer of 1956 yielded significant findings.

In his talk ‘‘Contrasts and Similarities’’, Oettinger distinguished two approaches to stimulating human brain functions using computers (McCulloch et al. 1956). The first approach, which is more engineering-oriented, aims to build efficient machines to assist in human intellectual tasks. In this case, the goal of simulation is to create computers that effectively replicate or enhance human mental abilities. Designers may focus on solving computing and control problems using the computer's strengths, such as speed and accuracy, and then integrate these abilities with those in which the human brain excels, such as adaptability to new situations (McCulloch et al. 1956). In the second case, more theoretical, the aim of simulation is quite different in Oettinger’s view: computers are tools for testing hypotheses (McCulloch et al. 1956). Oettinger identifies two distinct cases within this approach. First, there are theories of brain functions expressed in mathematical form, such as Bush and Mosteller's (1995) theory of conditioned learning, which emphasizes the importance of continuous practice in learning. This theory suggests that human behavior results from conditioning, or habitual reactions to certain stimuli encountered in life (Bush and Mosteller, 1955). Second, there are theories articulated in verbal form, such as Hebb's (1949) theory of learning and concept formation, which introduces the concept of "cell assemblies." According to Hebb (1949) when two neurons are activated simultaneously, the connection between them strengthens. Through repeated co-activation of constituent neurons, cell assemblies develop, facilitating the acquisition of new knowledge and the formation of memories. These concepts laid the groundwork for understanding the human brain and the endeavor to replicate its functions in machines.

Another significant aspect discussed was the pursuit of self-improvement, a primary focus of AI proposed for study in the 1956 Dartmouth conference (McCarthy et al. 1955). Turing proposed a “child machine”, which could be taught in the human manner to attain adult human-level intelligence (Hall, 2007). In 1969 McCarthy wrote, ‘‘Our ultimate objective is to make programs that learn from experience as effectively as humans do”. This led to investigations into natural language processing, learning methods, and self-improvement in machines. These goals and an undying AI optimism paid off. A year later, in 1957, the Artificial Intelligence Project was started at MIT young assistant professors Marvin Minsky and John McCarthy (Bobrow & Brady, 1998). AI showed promise in various domains, including automating mathematical activities, language understanding, logical problem-solving, and

modeling human intelligence. This laid the groundwork for over 45 years of research and development in natural language understanding, problem-solving, knowledge representation, reasoning, learning, vision, and robotics (Adlassnig, 2002). The Conference's impacts extended well beyond academia, solidifying AI as a genuine field of study and fueling an explosion of AI research, culminating revolutionary advances such as Machine Learning (ML), Neural Networks, and Natural Language Processing (NLP), paving the way for emergence of AI-driven platforms such as ChatGPT.

The authors Zhou (2018), Becker (1991), Zhu & Goldber (2009), Arulkumaran et al. (2017) and LeCun et al. (2015) have discussed the establishment of various learnings systems like supervised learning, unsupervised learning, semi-supervised learning, reinforcement learning, or deep learning that impacted the field of artificial intelligence. These learning systems encompass a variety of techniques and approaches for training, all falling under the umbrella of machine learning - a major subfield of AI. As described by Salehi & Burgueño (2018), machine learning focuses on the study, design, and development of algorithms capable of autonomously learning from data and making predictions based on that acquired knowledge. This involves creating algorithms and models that enable computers to improve their performance on tasks without the need for explicit programming. In essence, machine learning empowers computers to learn from data and enhance their abilities over time, contributing significantly to advancements in AI. The various ML methods in current use include Internet searches, e-commerce sites, goods and services recommender systems, image and speech recognition, sensor technologies, robotic devices, and cognitive decision support systems (DSSs) (Howard, 2019).

Indeed, Machine Learning stands as a significant advancement in AI, evident through various technologies such as spellcheck or again self-driving cars (Hutson, 2017). However, these innovations owe their existence to neural networks, essential computer systems that have enabled breakthrough capabilities (Hutson, 2017). As defined by Cary & Upham (1992), neural networks are computer models designed to simulate the operations of neurons in the brain, capable of outperforming traditional processors without the need for precise algorithms. Barrow (1996) further elaborates, describing neural networks in AI as complex systems composed of numerous interconnected components, closely resembling the structure and function of the nervous system. In a neural network setup, a collection of units receives segments of an input, such as pixels in a photograph. These units conduct basic computations on the received segments before transmitting them to the subsequent layer of units. Ultimately,

the final layer of the network represents the computed answer (Hutson, 2017). The networks possess the ability to learn and enhance their performance with training and experience (Barrow, 1996). This alignment with the anatomy and physiology of the nervous system not only validates Oettinger's earlier perspective on computers as tools for hypothesis testing but also recalls Bush and Mosteller's (1955) theory of conditioned learning, and Hebb's (1949) theory of learning and concept formation, particularly his notion of 'cell assemblies'. The later proves that these theories have significantly influenced the development of neural network models, affirming their efficacy and importance in AI.

Finally, Natural Language Processing emerges as another pivotal development in AI, serving as the strategy for facilitating interactions between computers, as noted by authors Sandhu & Itkikar (2018). The author Hutson (2017) defines it as a computer's attempt to "understand" spoken or written language. It therefore excels at vocabulary, grammar, and intent, and allow for variation in language use (Hutson, 2017). Meaning that it is able to understand, interpret and generate human language, there by facilitating tasks that would typically require human intelligence. NLP operates through Machine Learning algorithms, as highlighted by Dande & Pund (2023), which enable systems to understand language through learning experiences. It involves several levels of analysis, phonology for sound organization, morphology for word development, lexical for structural identification, syntactic for relationship analysis, semantic for meaning validation, discourse for contextual comprehension, and pragmatic levels for real-world interpretation, each contributing to a deeper understanding of human language and its nuances. Such comprehensive understanding fuels NLP's widespread adoption in diverse fields like machine translation, text classification, speech recognition, summarization, and question answering (Sandhu & Itkikar, 2018). Agarwal's (2019) study, however, highlights chatbots as a notable application of NLP. These digital assistants excel in providing customer support, virtual assistance, advice, monitoring, and more. Their versatility has quickly rendered them indispensable across various sectors and put NLP's status as a major discovery/tool in today's digital landscape.

The author Han (2023) defines a chatbot as a program that uses natural language to simulate a human conversation within social networks or web applications. It can receive user questions, engage in casual conversation, or assist users with specific tasks, thereby freeing up organizational personnel from repetitive tasks. Despite their ability to mimic human interaction, Saxena (2022) points out that chatbots have limited knowledge at runtime and cannot keep track of all conversations. These chatbots utilize machine learning, often implemented through

algorithms provided by ChatterBot, a Python library designed to easily generate automatic responses to user input (Saxena, 2022). Chatbot performs various tasks including presenting information and taking input, with the system matching queries to its knowledge base and providing appropriate responses (Saxena, 2022). They are increasingly utilized for tasks such as booking flights, querying visa information, or assigning tasks to developers, integrated into websites, socials networks, and mobile applications without requiring dedicated installations (Pérez-soler et al., 2020). Major software companies like Google, Microsoft, IBM, and Amazon have developed chatbot development platforms to engage with their users more effectively (Pérez-soler et al., 2021). Nevertheless, advanced chatbots like ChatGPT have pushed the boundaries further, and completely redefined the limits of AI because they enable all-round interaction with humans on a wide range of topics and remember past conversations. They leverage large-scale language models trained on diverse datasets, allowing them to generate human-like text with accuracy and engage in more nuanced conversations for a broader range of applications.

Coming from the Generative Pre-training (GPT) family, they are large language models developed by OpenAI that are based on the transformer architecture (Haque, 2023). Generative Pre-Training Transformer is a state-of-the-art AI system. It enables chatbots to interpret and develop normal language similar to humans with impressive precision and fluency. It is made up of multiple layers, which are designed to process and generate text. Natural Language Processing (NLP) has seen tremendous advancements with the development of Generative Pretrained Transformer (GPT) models. These language models have been shown to generate contextually appropriate and coherent responses to natural language prompts, making them highly useful for various NLP applications (Thakkar & Jagdishbhai, 2023). The authors Arslan et al. (2021) describe the latter as LLM (Large Language Models), which are language models trained on vast datasets of textual information. They are designed to handle specific language related tasks efficiently. According to Lozic and Stular (2023), LLMs are generative pretrained transformers based on the Transformer architecture, a type of neural network. Further elaborating on the Transformer mechanism, Thakkar and Jagdishbhai (2023) explain that it excels at processing sequential data, particularly text, by constructing relationships between all words in a sentence. The transformer architecture consists of a series of transformer blocks, each of which includes a self- attention mechanism and feed forward neural network layers that will weigh the influence of different input words on each output word (Thakkar & Jagdishbhai, 2023). As a result, instead of processing words in a sentence sequentially, it constructs

relationships between all words in a sentence (Lozic & Stular, 2023). This allows the model to learn effectively and generate coherent, natural-sounding text (Thakkar & Jagdishbhai, 2023). The scale of an LLM depends on factors such as the size of ingested datasets, training compute, and the number of parameters it can support. Parameters are numerical values determining how a neural network processes and generates natural language (Lozic & Stular, 2023). The more parameters a model has, the more data it can learn from and the more complex tasks it can perform (Lozic & Stular, 2023). Notably, the OpenAI GPT model is the largest language model created to date, boasting 175 billion parameters and the ability to process millions of texts (Ufuk, 2023).

Open AI is a non-profit research and deployment company founded in 2015 by a group of entrepreneurs including Elon Musk and Sam Altman with the goal to "ensure that artificial general intelligence benefits all of humanity" (OpenAI.com). It has developed several versions of the GPT models, which has been iteratively updated from GPT-1 to GPT-4. Each version has seen an increase in the number of layers and model size, along with advancements in machine learning techniques and software engineering. GPT models were trained on large datasets using techniques like unsupervised and self-supervised learning, requiring significant computational resources (Haque, 2023). Supervised learning, as defined by Hutson (2017), involves comparing algorithm outputs with correct outputs during training, while unsupervised learning involves searching for patterns in data without guidance.

The GPT series commenced in 2018 with the release of GPT-1, which marked the beginning of pre-trained large models (PLMs). GPT-1 employed unsupervised learning on approximately 40GB of text data, utilizing the transformer architecture and pre-configured supervision training to predict the next word in a text sequence (Marcel et al.) With 117 million parameters, GPT-1 was trained on unlabeled text data collected from millions of webpages (Radford et al, 2019). The following year, GPT-2 was introduced, pre-trained unsupervised on a larger scale of training datasets, featuring 1.5 billion parameters (Marcel et al.). Its text generation and generalization capabilities were significantly enhanced, allowing it to process more extensive text samples (Hua et al., 2023). However, its full release was restricted due to concerns about potential malicious use (Marcel et al. 2023). Subsequently, in 2020, GPT-3 was developed, the largest architecture of the GPT series (Zho & Luo, 2021) With 175 billion parameters and trained on over 570 GB of text and data, GPT-3 exhibited significant improvements over its predecessors, showcasing abilities in generating coherent text, language translation, and natural language processing tasks with minimal training examples (Marcel et

al., 2023). Haque (2023) elaborates on several key features of GPT-3. Firstly, he says, contextualization allows GPT-3 to consider the context of a conversation, resulting in more coherent and relevant responses. Secondly, flexibility enables GPT-3 to be tailored for various chatbot tasks and domains. Thirdly, scalability is a notable trait of GPT-3, being a large transformer-based model capable of handling extensive datasets and long-range language dependencies. Lastly, GPT-3 excels in natural language generation, producing responses that closely resemble human language, making it an ideal choice for chatbot applications. Aljanabi et al. (2023) elucidate that this capability enables users to input queries in a manner similar to conversing with another person, rather than relying on specific keywords or phrases. This enhances the user experience, making it more user-friendly. Additionally, compared to its predecessor, GPT-3 demonstrates proficiency in both few-shot learning and zero-shot learning (Brown et al., 2020). In zero-shot learning, GPT-3 can perform tasks for which it hasn't been explicitly trained. This implies that it can generate text in response to new prompts by leveraging its general understanding of language and the given task. In few-shot learning, GPT3 can adapt to new tasks and domains with minimal training, showcasing its ability to learn from a small number of examples (Ray, 2023). In 2022, a subsequent version known as InstructGPT, or the derivative version of GPT-3.5, was introduced (Hua et al., 2023). This iteration introduced Reinforcement Learning from Human Feedback (RLHF) to gradually train the GPT3 model to better understand and align with user intent (Wu et al., 2023). Reinforcement learning, as defined by Hutson (2017), is a type of machine learning where an agent learns by pursuing a goal, such as achieving a high score in a video game and receives feedback in the form of rewards or penalties. During reinforcement learning from human feedback, the agent receives evaluative feedback from a human observer, as described by Li et al. (2019). The primary aim was to align the models more closely with user intentions, mitigate toxicity, and prioritize truthfulness in their generated output. This evolutionary step reflects a deliberate effort to enhance the ethical and responsible usage of language models, with the ultimate goal of providing a safer and more reliable user experience (Haque, 2023).

Finally, in November of the same year, ChatGPT made a surprising entrance into the world, capturing widespread attention. Its success exceeded all expectations, attracting 1 million users within the first 5 days of its launch (Gupta, et al. 2023). According to Thorp (2023), it quickly became a cultural sensation, thanks to its easy accessibility through a web portal and its ability to provide endless entertainment. Indeed, as noted by Haque (2023), ChatGPT's main aim is to simplify information access and task completion by offering helpful

and accurate responses to user inquiries and requests. It's capable of generating responses similar to human interaction, making it handy for tasks like answering questions, translating text, summarizing content, diagnosing errors, and gaining knowledge. Additionally, ChatGPT can handle follow-up questions, acknowledge mistakes, challenge false premises, and reject inappropriate requests (Hua et al., 2023). Unlike its predecessors, ChatGPT possesses the ability to recall previous user interactions within the conversation, enabling endless and continuous dialogue (Wu et al., 2023). Therefore, the evolution of GPT has been significant, continuously building on its past achievements, particularly with the development of the GPT3 model (Marcel et al., 2023). From GPT-1 to ChatGPT, the model's capabilities have steadily expanded in terms of size, training database, performance, and ethical considerations.

While the platform provides free access to the public, a premium subscription version called ChatGPT Plus has been available since February 2023, offering enhanced services at a cost of $20 per month (Awasth & Kaveri, 2023). The premium version of GPT offers additional benefits such as faster load times and access to GPT-4. The major enhancement in GPT-4 is its capability to process images and video files, making it 500 times more powerful than the existing ChatGPT (Awasth & Kaveri, 2023). Gupta et al. (2023) have highlighted improvements in language modeling, with GPT-4 boasting more parameters and being trained on a broader range of datasets, resulting in more accurate and reliable language skills. Additionally, GPT-4 may incorporate multilingual learning, allowing it to learn from various modalities including text, graphics, audio, and video, thereby comprehending and providing answers across multiple media types. Moreover, GPT-4's contextual understanding and reasoning capabilities are expected to be more sophisticated, enabling it to generate more logical and pertinent responses based on the context of the conversation. Furthermore, GPT-4 is anticipated to be quicker and more energy-efficient than its predecessors, making it suitable for a wider range of applications and devices (Gupta et al. 2023).

1.2. ChatGPT & its Benefits

ChatGPT encompasses a range of features. Similar to other chatbot ChatGPT is capable of engaging in human-like interactions (Taecharungroj, 2023). Functioning as an intelligent conversational agent, ChatGPT excels in generating detailed responses to input prompts. When provided with an instruction, ChatGPT analyzes it and quickly generates detailed responses using machine learning and online resources (Lingard, 2023). Like other advanced language

models, ChatGPT initially builds upon the Generative Pre-Trained Transformer (GPT), drawing on its capacity to generate text by anticipating the next word in a series of text based on the preceding words(Ray, 2023).During this preliminary training ChatGPT develops an understanding of words and phrases connections in everyday language, enhancing its ability to produce coherent and realistic responses in a conversation (Ray, 2023). Next, in the training process, GPT experiences unsupervised learning on large datasets to develop a basic understanding of language. It can learn from a variety of datasets, including literary works and books like BooksCorpus, online content such as WebText, and comprehensive datasets sourced from multiple origins (Ray, 2023). These datasets expose ChatGPT to various writing styles and contexts, enhancing its comprehension of human language patterns. Additionally, ChatGPT can engage in diverse training methods to enhance its capabilities. These methods may include zero-shot learning, allowing it to generate responses for tasks it has never encountered before, as well as few-shot learning, enabling it to learn new tasks with just a few examples (Thakkar & Jagdishbhai, 2023). Furthermore, it can fine-tune its abilities through supervised training on specific datasets tailored to tasks across different domains like medical, academic, and legal (Thakkar & Jagdishbhai, 2023). Roumeliotis & Tselikas (2023) describe the fine-tuning process as a model training that focuses on labeled datasets comprising task-specific inputoutput pairs. The model's parameters are iteratively adjusted to minimize the discrepancies between the model's predicted outputs and the proper labels for the given tasks (Roumeliotis & Tselikas, 2023). This adaptability via fine-tuning allows ChatGPT to serve specific applications such as customer support, content creation, tutoring, translation, and more (Thakkar & Jagdishbhai, 2023). Additionally, ChatGPT may learn to understand and generate text based on given contexts or prompts through contextual learning. In Context Learning (ICL), the model simply learns and performs tasks by analyzing and learning from the information and patterns within each context it encounters (Wu et al., 2023; Xun et al.,2017). This process enables ChatGPT to extract contextual knowledge that assist in a wide variety of application domains (Xun et al., 2017). Finally, ChatGPT can also receive specialized training with explicit instructions or guidance to enhance its capabilities for specific tasks. This can be achieved through the chain of thought feature (CoT). For situations requiring additional context or information, Chain of Thought (CoT) prompting is suggested to further enhance ChatGPT's capability to tackle complex tasks like answering arithmetic problems, common sense queries, and logical reasoning questions (Wu et al., 2023). CoT is dedicated to constructing a series of intermediate steps to simulate the thinking process of humans in completing complex tasks

called “Let’s think step-by-step” (Chen et al., 2023) This involves asking more questions to gain a better understanding of the task at hand or to gather more context (Wu et al., 2023). Adding CoT instruction to each input query can improve GPT’s accuracy from 17.7% to 78.7% (Chen et al., 2023).

With such features, ChatGPT has also gained recognition for its advanced capabilities. The authors Sarode & Bhamare (2023) identified 9 specific capabilities of ChatGPT, which include text generation, text completion, question answering, summarization, text translation, conversational AI, sentiment analysis (identifying emotional tone in text), named entity recognition (identifying and classifying named entities in text), and part-of-speech tagging (assigning grammatical categories to words in text). Furthermore, research by Singh, Kumar & Mehra (2023) has emphasized ChatGPT’s additional feature in content writing, and assisting creative endeavors like crafting news headlines, poetry, essays, and articles. Moreover, the authors Gupta et al. (2023) demonstrates ChatGPT’s proficiency in various language understanding and generation tasks such as multilingual translation. Some media articles note that it supports nearly 100 languages, and a research study evaluated the chatbot’s performance in 37 languages (Lai et al., 2023). This versatility leads to a multitude of global uses for ChatGPT, including creative writing, essay writing, prompt writing, code generation, and answering questions, all aimed at addressing the question 'what can ChatGPT do’ as revealed in Taecharungroj’s (2023) study. Additionally, ChatGPT finds utility in diverse areas such as education, call center, tourism education, digital marketing, mental health support, future business, e-commerce, language learning, digital transformation and engineering as highlighted by the authors Tao & Xu (2023) and Molla et al. (2023). Since its introduction, there has been a remarkable increase in the number of research on ChatGPT (Malik, 2023). By examining Malik’s (2023) report, in January 2023, ChatGPT was predominantly utilized by 902 companies worldwide, representing a diverse array of industries ranging from technology, education, and manufacturing to federal agencies, media outlets, and entertainment enterprises. Notably, 27% of these users came from the technology sector, 23% from education, and 10.9% from business, with less than 10% from manufacturing. A survey conducted by Resume Builder (2023) on 1,000 business leaders in the US found that 49% of companies are currently using ChatGPT, while another 30% plan to adopt it in the future. Among the companies already using ChatGPT, 25% reported saving more than $75,000 through its implementation, and a vast majority, 93%, intend to expand their use of the technology. In their article Brock and Wangenheim (2019) adopt a comprehensive approach to examine the current utilization of AI

in businesses and explore the distinguishing characteristics of AI leaders compared to companies falling behind. Through a large-scale survey, they outline key principles for successful AI implementation, emphasizing the significance of data infrastructure, skilled personnel and internal expertise, the strategic integration of AI to enhance existing business operations, the necessity of embedding AI within the organizational framework while collaborating with technology partners, and the commitment of top management. The latter highlights the increasing importance of AI implementation in the business sector for achieving success.

Numerous studies have also delved into the impact and implications of ChatGPT's deployment (Aljanabi, 2023; Deng & Lin, 2023). Despite its decent recent public release, ChatGPT has already gained significant research attention. And research endeavors have predominantly focused on healthcare, education, and writing domains. Thorp (2023) conducted a qualitative assessment of ChatGPT's responses across various topics, showcasing its proficiency in tasks like education, literature, and scientific writing. Even the author seemed to have been entertained with ChatGPT's writing skills by providing an engaging narrative when tasked with completing a scene from a classic play. In the field of medicine and public health, ChatGPT has been investigated for various applications. For instance, Gilson et al. (2023) conducted a study testing ChatGPT's ability to answer questions within the scope of the United States Medical Licensing Examination Step 1 and Step 2 exams. Through comparative performance analysis, they found that ChatGPT achieves results equivalent to a passing score for a third-year medical student, showcasing its potential in medical education and clinical decision-making assistance. Additionally, Zhou (2023) evaluated ChatGPT's capabilities in generating medical reports in a controlled experimental study involving a 31-year-old male patient with no significant medical history. The results showed that ChatGPT effectively produced coherent, comprehensive, and clinically relevant medical reports based on patient laboratory results, demonstrating its precision and reliability in this domain. In the realm of education, Hsu et al. (2023) conducted a controlled experimental study involving 40 nursing students, demonstrating that utilizing ChatGPT as a learning assistant significantly improved post-test scores, indicating its potential to aid students in the learning process. Additionally, Fauzi et al. (2023) conducted a mixed methods study analyzing the impact of ChatGPT on student productivity in higher education. Their findings revealed that ChatGPT significantly enhances student productivity by offering valuable information, resources, and support, fostering collaboration, improving time management, and boosting motivation. Dergaa et al.

(2023) explored the potential of ChatGPT and other NLP technologies to enhance academic writing and research efficiency. Additionally, Chen (2023) discussed some of the potential benefits of using AI tools for scientific writing. The author argued that chatbots can be beneficial for writers whose native language is not English. Notably, the paper was originally written in Chinese and then summarized by ChatGPT before being translated into English by AI tools. These studies have revealed the various ways ChatGPT is being utilized and some of the benefits it may offer. For example, research by Aljanabi (2023) portrays ChatGPT as one of the most exciting advancements in artificial intelligence.

Like author Aljanabi (2023), many authors have found this technology to be a positive revolution for the world and have expressed its numerous advantageous features. First, the research conducted by Zhou et al. (2023) has highlighted ChatGPT's proficiency in generalization, indicating its understanding of the user's intent across multiple conversations (Zhou et al., 2023). This observation was supported by Ray (2023), who emphasized ChatGPT's enhanced understanding of context by effectively delivering accurate responses, thereby enhancing the user experience. Moreover, techniques such as supervised fine-tuning and reinforcement learning from human feedback further refine its adaptability and generalization across tasks. Indeed, ChatGPT can be fine-tuned for specific tasks and applications, allowing it to be tailored to the unique needs of researchers across various scientific disciplines (Ray, 2023). Similarly, Sarode & Bhamare (2023) have highlighted its proficiency in explaining complex concepts. They explained that users can obtain concise summaries of topics by inputting "explain [topic]" into ChatGPT. By learning patterns and relationships from various sources, ChatGPT can grasp the nuances of different domains and generate relevant and coherent responses, even to open-ended or ambiguous queries (Koubaa et al., 2023).

Additionally, Deng & Lin (2023) highlighted two significant benefits: increased efficiency and improved accuracy. ChatGPT contributes to efficiency by automating conversations, thereby saving time and resources previously required for manual interactions. Its quick response generation facilitates faster conversations, leading to a more personalized customer experience and improved customer service. Unlike traditional AI solutions such as chatbots, ChatGPT's large-scale pre-trained language model enables it to understand customer questions accurately and provide natural-sounding responses, thereby improving business productivity and customer satisfaction. For instance, the research by Hassani & Silva (2023) highlights ChatGPT's potential to enhance productivity and accuracy in data science workflows

by automating various tasks and providing valuable insights for decision-making processes. The paper discusses how ChatGPT can assist data scientists in automating various aspects of their workflow, including data cleaning and preprocessing, model training, and result interpretation. Furthermore, ChatGPT demonstrates superior accuracy compared to manual conversations as discussed by Deng & Li (2023). This is because it is trained on a large dataset of conversations, allowing it to understand the context of a conversation and generate appropriate responses. Its accuracy and generative capabilities are further enhanced by its ability to learn from its own mistakes, allowing it to adapt to new contexts and produce more accurate results. Supported by the authors Zhou et al. (2023) ChatGPT demonstrates the ability to correct itself. It can acknowledge and rectify mistakes based on user feedback, ensuring greater accuracy and reliability in interactions (Zhou et al., 2023). Moreover, it can challenge incorrect questions by prioritizing safety in its interactions and offer reasonable responses, taking into account "ethical and political factors"(Zhou et al., 2023). With accuracy and efficiency, ChatGPT can even offer cost-effective solutions by reducing the need for human operators in customer service, as mentioned by Deng & Lin (2023). It learns and improves over time, minimizing manual updates and leading to substantial cost savings for businesses handling numerous customer inquiries (Sarode & Bhamare, 2023). Furthermore, ChatGPT demonstrates remarkable creativity, excelling in brainstorming, story, poem or speech generation (Zhou et al., 2023). With its diverse set of features, ChatGPT's ability to generate human-like text and tackle complex queries has already made significant impact and is expected to continue advancing rapidly (Aljanabi, 2023). This is precisely why ChatGPT has been the perfect subject of research. Considering the future of ChatGPT and similar large language models, numerous exciting possibilities and opportunities for this technology to change how people interact with technology and improve daily lives constantly emerge.

1.3. ChatGPT's Challenges

However, despite its many benefits, authors have identified several drawbacks or flaws in AI tools like ChatGPT. After thorough reviews and investigations, three main issues with ChatGPT's free version have been observed. Firstly, authors Molla et al. (2023), Chowdhury & Haque (2023), and Singh et al. (2023) have highlighted the knowledge shortage or lack of real time information that ChatGPT faces. It has been revealed that its training data only extends up to a certain point, limited to September 2021. Consequently, there is a possibility that it

lacks access to the most recent information or remains unaware of recent occurrences and events that have occurred after September 2021. It's important to note that ChatGPT is unable to actively seek out new knowledge from experience (Haque, 2023). It relies solely on the data it was trained on, and while it may adapt to new inputs to some extent, its intelligence is limited by the data it was initially taught (Singh et al., 2023). This renders ChatGPT outdated, as its training data dates back to September 2021—almost three years ago. Since then, there have been numerous updates and changes in the world, especially in literature and information. Given that the world is constantly evolving, any research conducted using ChatGPT should be approached with caution and understood to have an expiration date. As the model cannot access the latest and most accurate information, it becomes an unreliable source for daily use.

Second, the authors Deng & Lin (2023) have expressively raised the issue of data bias. Chowdhury & Haque (2023) refers to data bias as a tendency of machine learning models to replicate and even amplify biases in the data used to train them. For instance, if the training data is predominantly sourced from a specific demographic or region, the resulting model may not perform well on text data from other demographics or regions. Another manifestation of data bias in ChatGPT arises from the language patterns present in the training data. ChatGPT might inadvertently learn to perpetuate biases encoded in the language, such as gender or racial biases. This can lead to the generation of text that reinforces stereotypes or discriminates against particular groups of people (Chowdhury & Haque, 2023). Such unintended consequences can occur, for instance, if the training data is heavily weighted towards a particular demographic group or region (Singh et al., 2023). The author Mattas (2023) explained that AI systems can exhibit bias in a number of ways, originating from their training data, the algorithms used in their development, and the individuals responsible for their design and operation. This bias can lead to AI systems perpetuating social inequalities by discriminating against certain groups of people. Furthermore, Singh, Kumar & Mehra (2023) conducted research that supported the notion that biases are inherent in all humans and extend to the machines they create, including Chat GPT. Their findings revealed evidence of racial, gender, and religious biases, including the association of Muslims with terrorism and violence. Additionally, Hua et al. (2023) categorized these biases into four types: cultural bias, linguistic bias, temporal bias, and political bias. Cultural bias refers to the model's inclination towards specific gender, race, or social groups. Linguistic bias is the variation in accuracy of model responses across different languages due to limited training data for less commonly spoken languages. Temporal bias relates to the model's tendency to lag behind in recognizing time

sensitive events or trends due to the fixed time frame of its training data. Political bias encompasses cognitive biases related to political views or ideologies, stemming from a lack of representative data in the training set (Hua et al., 2023).

These challenges arise because of the huge amount of text data used to train ChatGPT. Despite its ability to analyze and incorporate a wide range of sources and perspectives to produce coherent responses, the generated replies often contain factual errors, known as the hallucination problem (Wu et al., 2023). These errors may arise from inaccuracies and noise present in the training data (Molla et al. 2023). The model learns both linguistic knowledge (syntax and semantics) and world knowledge (facts and common sense) from the data. Consequently, the generated text is influenced by both the input text and the prior knowledge stored in the language model (Wu et al. 2023). If the user's input is factually accurate, then the erroneous output is attributed to incorrect knowledge learned by the model itself. Due to the immense size of the data, manual verification of each piece is impractical, it is inevitable that training datasets contains misinformation (Hua et al. 2023). Moreover, The GPT series models still only use the simplest information processing method in human wisdom and because ChatGPT does not have the ability to clarify and confirm fuzzy queries beyond the human annotations, ChatGPT generates responses based on predicting the most probable next word or phrase. Consequently, these biases not only will perpetuate because ChaGPT doesn’t have an understanding on the subject but because as it is based on the patterns and associations it has learned from its training data. Lastly, the absence of emotional intelligence in ChatGPT, as highlighted by the author Sarode and Bhamare (2023), can be considered another limitation. Unlike humans, ChatGPT may struggle to recognize and appropriately respond to emotional cues, such as sarcasm or humor, leading to tone-deaf or insensitive responses. This limitation can adversely affect the user experience and result in frustration. This observation is corroborated by studies conducted by Molla et al. (2023) and Raj et al. (2023), where ChatGPT may find it challenging to accurately understand and respond to the various emotions conveyed in the conversation. Particularly when addressing emotionally or sensitive topics, there is a possibility that ChatGPT may fail to provide compassionate or sensitive responses.

With these flaws raised, three main areas of concerns have emerged, starting with privacy. Indeed, beyond the requirement to sign in on the ChatGPT website (create an account or link it to your Google account) accessing conversational AI systems like ChatGPT necessitates access to vast amounts of personal data. This data can include text conversations, speech, user inputs, and any personal information contained in the text that the model may

gather and retain about the user (Singh et al., 2023). Sensitive information such as private preferences, opinions, and beliefs, may also be included in this data (Singh et al., 2023). While this data is utilized to train the models and enhance their performance, it can also be employed for purposes such as advertising or marketing (Mattas, 2023). Additionally, data sharing presents a further privacy concern with ChatGPT, as the model's creators or other organizations may gain access to the text that ChatGPT generates (Singh et al., 2023). Consequently, there are apprehensions regarding the privacy of individuals whose data is utilized to train and operate these systems. Particularly concerning is how ChatGPT's capacity to produce humanlike text combined with data sharing, amplifies the potential for impersonation and identity theft (Deng & Lin, 2023).

Second, it raises security concerns. The authors Guo et al. (2023) have categorized security concerns associated with ChatGPT across seven fields, highlighting potential risks and consequences. In terms of political security, the misuse of ChatGPT could jeopardize national security by accessing sensitive information, leading to risks such as information leakage. This could undermine national security, disrupt international relations, and manipulate public opinion (Guo et al., 2023). In military security, ChatGPT's ability to produce network attack codes targeting critical infrastructure and government agencies poses threats by generating false intelligence data and fueling the development of new weapon systems, escalating tensions in international relations (Guo et al., 2023; Ray, 2023). In Economic security, ChatGPT could tamper with training data and result in the generation of false financial data and market predictions harming businesses. Additionally, the extraction of confidential business secrets raises concern about economic stability and AI can be used to impersonate or conclude identity theft for financial fraud, access illegal loans, false insurance claims, etc. exposing the financial industry to substantial risks and losses (Guo et al., 2023). In Cultural security, the imbalance in linguistic corpora (currently being of majority English datasets) used to train ChatGPT may marginalize minority languages and cultures, hindering cultural diversity and accuracy in content generation, thereby impeding efforts to promote cultural diversity (Guo et al., 2023). Social security risks arise from ChatGPT's potential to spread fake news and malicious content, eroding trust within society, making it difficult for the public to discern the truth from fiction (Ray, 2023). Moreover, personal data shared by users to facilitate interactions with large language models poses a risk of losing control over their personal information and infringing on individuals' privacy rights. It may also facilitate the generation of discriminatory speech, fostering prejudice and hostility (Guo et al., 2023). Ethical security concerns encompass the

generation of false and harmful information, raising moral dilemmas regarding freedom of expression and societal harm (Guo et al., 2023). Legal security issues include potential breaches of data protection and privacy laws, copyright infringement, and uncertainties regarding intellectual property rights associated with the use of generative AI (Guo et al., 2023).

Finally, ethical concerns were raised by the authors Mattas (2023) and Ray (2023). The latter draws back on the data bias defined by Chowdhury & Haque (2023), suggesting that the information ChatGPT was trained on may generate comments that are inappropriate, offensive, and raise ethical concerns (Mattas, 2023). According to the author Morahan (2015), ethics are actions that align with cultural expectations regarding morality and fairness, essential for maintaining societal balance. Humans typically possess an intuitive understanding of ethics acquired through socialization; a quality notably absent in AI models like ChatGPT (Stahl & Eke, 2024). Ray (2023) further raises several points that could spark concerns, such as emotional manipulation and persuasion. AI-generated content could exploit people's emotions, influence their beliefs or behavior, or spread disinformation. Another concern is the dependence on AI-generated content. As AI language models become more prevalent, there's a risk of increased reliance on AI-generated content for communication, decision-making, and information consumption. This dependency might diminish critical thinking, creativity, or appreciation for human-generated content (Ray, 2023). The issue of the Digital Divide and Access to Technology is significant. This refers to the gap between individuals, households, or communities regarding access to information and communication technology. This gap can exacerbate social, economic, and educational inequalities, leading to disparities in opportunities, resources, and overall quality of life (Ray, 2023). There are also concerns about Accountability and Responsibility. The advanced nature of ChatGPT makes it challenging to assign accountability and responsibility when errors or harm occur. As AI systems become more autonomous, determining who should be held responsible for unintended consequences becomes increasingly complex (Ray, 2023). The Autonomy of advanced AI systems like ChatGPT raises questions about the appropriate level of autonomy they should have. As these systems become more capable of generating content without human intervention, concerns arise about the potential loss of control and accountability (Ray, 2023). Finally, there are issues surrounding Intellectual Property and Authorship as evidenced by Got and Katanoda (2023). Determining who should be credited as the author and who owns the rights to generated content becomes increasingly complex. Especially, when authors like O'Connor's (2023) already

acknowledge ChatGPT as a co-author in “Open artificial intelligence platforms in nursing education: tools for academic progress or abuse?”. Additionally, according to Stokel-Walker (2023), four more papers would list ChatGPT as a co-author for its contributions to writing. Their use raises concerns about the authenticity and credibility of academic work, as well as the well-known issue Ethical Use of AI-generated Content (Ray, 2023). Rahman and Watanobe (2023) have highlighted issues such as cheating and the difficulty in evaluating ChatGPT generated information, prompting ethical questions into the suitable contexts and applications for such content. For example, using AI-generated content in journalism or academic research may raise concerns about authenticity, integrity, and risk for plagiarism. Moreover, it may have repercussions on Creative Industries, potentially diminishing the value of human creative efforts and disrupting traditional creative practices and job roles (Ray, 2023).

Therefore, researchers have extensively discussed the ethical dimensions of AI and its implications for malicious use of the technology. Individuals and organizations can exhibit a lack of trust and concerns relating to the ethical dimensions of AI systems and their use of shared data (Dwivedi et al., 2021). However, the worries go beyond that. People and organizations often have concerns about how AI systems handle data and whether they can be trusted (Dwivedi et al., 2021). But sometimes these worries go beyond just concern, they can escalate to full-blown panic, especially within the industry itself (Xu, 2023). Even experts' opinions don't always calm these fears. Studies by Misra et al. (2019) and Müller and Bostrom (2016), conducted with AI experts predicted that AI systems are likely to each human-level abilities by 2075, and some experts worry that if AI progress towards super intelligence it could have negative consequences for humanity. Moreover, Grace et al. (2017) conducted a survey involving 352 researchers, focusing on the timing of AI's superiority in specific occupations and its broader societal impacts. The results revealed that researchers anticipate AI outperforming humans in various tasks within the next decade, including translating languages (by 2024), writing high-school essays (by 2026), driving trucks (by 2027), working in retail (by 2031), writing bestselling books (by 2049), and working as surgeons (by 2053). Furthermore, there is a 50% chance, according to researchers, of AI surpassing humans in all tasks within 45 years and automating all human jobs within 120 years, with respondents from Asia anticipating these milestones much sooner than those from North America. Research by Zhou et al. (2019) predicts that AI will replace 35.8% of China's current employment by 2049, with disproportionately larger impacts on female, elderly, low-educated, and low-income workers. This trend reflects a labor-substituting technological progress, where an increasing

number of jobs will be replaced by AI. Particularly in the media industry, author Xu (2023) believes that the emergence of ChatGPT greatly improves the efficiency of the production and dissemination of media information, leading to substantial savings in labor costs. However, this efficiency improvement may also result in a large reduction of jobs in the media industry, causing certain social panic (Xu, 2023). The decline in media employment will not only create psychological distress for senior media professionals but also discourage newcomers. Over time, this panic within the industry may spread to society and not only disrupt professions but the normal order of life (Xu, 2023).

Nonetheless, authors proposed a solution to mitigate these concerns: division of labor. For instance, the author Xu (2023) believed that the relationship between humans and ChatGPT should not be competitive, but cooperative. The study conducted by Shrestha et al. (2019) delved into how AI is reshaping decision-making structures within organizations. They elaborated a framework outlining conditions under which organizational decision-making can be fully delegated to AI, categorizing them into three structural approaches: full human-to-AI delegation, hybrid models where AI and humans collaborate, and aggregated models where decisions are made in parallel by humans and AI. The choice among these options depends on factors such as the decision-making context, the range of alternatives, decision-making speed, and the need for interpretability and replicability. Most importantly, the authors stressed the significance of organizations adapting their structures to use the potential of AI while addressing challenges related to ethics, bias, and transparency (Shrestha et al., 2019). Moreover, the study conducted by Huang et al. (2019), explored the concept of Feeling Economy in the age of AI. It emphasizes the importance of various tasks such as mechanical tasks (e.g., equipment repair and maintenance), thinking tasks (e.g., processing, analyzing, and interpreting information), and feeling tasks (e.g., interpersonal communication) across different job categories. Through empirical analysis, these authors demonstrate that in the future, human employees will increasingly engage in feeling tasks as AI systems gradually take over thinking tasks, similar to how machines and robots have replaced mechanical tasks. As AI excels at analytical and thinking tasks, human workers are expected to focus more on interpersonal and empathetic tasks (Huang et al., 2019). While ChatGPT may excel in producing convincing responses, research by Bahrini et al. (2023) suggests that it lacks the depth of understanding, empathy, and creativity inherent in humans. This highlights the importance of finding a balance between AI and human capabilities. While AI may assume many tasks, a balance can be struck where each complements the other, optimizing their respective strengths and abilities. All of

these remarkable features, particularly in terms of interactions and writing capabilities, have positioned ChatGPT as an intriguing new technology that has taken on the world, more than any others before. Despite raising numerous concerns and controversies across various sectors, it is precisely this widespread interest and debate that makes ChatGPT the ideal subject for this research, highlighting its significance and impact in the realm of artificial intelligence.

Chapter 2- Automated Journalism

2.1. Background: AI & Journalism

The use of AI is already a reality in the media, especially in journalism. According to Tejedor and Vilà (2021), the Los Angeles Times was one of the first to use AI back in March 2014. They used a program called Quakebot to quickly report on earthquakes. This program looks at alerts from the US Geological Survey and automatically writes articles about earthquakes if they meet certain criteria (Los Angeles Times, 2024). This finding was supported by Carlson (2015), who stated that the first application of AI in journalism occurred in the US in 2014, just three minutes after a 4.7 magnitude earthquake struck Los Angeles, when indeed the first news accounts appeared to be on the website of the Los Angeles Times. Although short and factual in tone, the speedy article made a significant impact in proving the rapidity and efficacity of AI applications in news reporting. According to Tunez-Lopez et al. (2021), the origin of AI in journalism also dates back to 2014 in the US when Associated Press, Automated Insights, and Zacks Investment Research generated 3000 news articles about corporate profits. However, Lindén (2017) offers an earlier perspective, suggesting that the use of AI in journalism began as early as 2010. Narrative Science and Automated Insights, two prominent software companies, played a pivotal role during this period by establishing a dominant presence in the industry. Their software platforms were capable of generating hundreds of thousands of reports, articles and texts across various topics, including sports, finance, and marketing for various news organizations, including major players like Associated Press and Forbes who adopted them in 2012 (Ulanoff, 2014; Lindén, 2017; Levy, 2012). Moravec et al. (2020) supported this belief, stating Associated Press (AP) was indeed one of the first news agencies to publish these reports and combat the two mega-trends in the business: the relentless increase in news to be covered and the human constraints associated with covering it (Marconi & Siegman, 2017; Fanta, 2017). The Associated Press now produces automated stories for around 3,700 companies, and AP's closest competitors Reuters and AFP likewise produce thousands of automated stories each year (Fanta, 2017).

During these years, European agencies and media quickly embraced AI technologies. In 2014, Le Monde employed the Data2Content AI system for micro-news on election results, and in 2015, it partnered with Syllabs to automate coverage of regional elections, resulting in 34,000 articles produced by Syllabs during the departmental election night in March 2015 (Sánchez-González, 2017; Danzon-Chambaud, 2021; Lindén, 2017). Throughout the last

decade, the application of AI to news writing extended to news agencies. A dozen European news agencies either adopted or planned for the development of this technology (Fanta, 2017). This trend was not confined to Europe or the US with media entities such as Forbes, Yahoo!, Reuters, Sports Illustrated, The Washington Post, or The New York Times in the United States, and BBC, The Guardian, or The Telegraph in the United Kingdom, as well as Der Spiegel or Berliner Morgenpost in Germany, but also to Asian countries, including South China Morning Post or The Shinano Mainichi Shimbun in Japan, and Latin American entities such as El Financiero in Mexico or the Brazilian television network Globo, also adopting AI technology (Sánchez-García et al., 2023).

Therefore, in various forms of journalism, AI have long played a role in aiding journalists and the media businesses. However, this evolving landscape of journalism has given rise to a new genre known as automated journalism, also referred to as robotic journalism or artificial intelligence journalism (Moravec et al., 2020). This emergence is part of a broader trend called computational journalism, which signifies the increasing influence of computation and data on journalistic practices (Anderson et al., 2013). As described by Gynnild (2014), computational journalism involves the use of algorithms, data, and social science methodologies to introduce innovative approaches for journalists to think and behave. However, as described by Karlsen & Stavelin (2014), computational journalism is an extension of traditional journalism, employing computational tools to handle large datasets without necessarily improving efficiency or reducing the burden of technical tasks for journalists. Thus, although the skills and tools required for this type of journalism may differ from those of typical journalists, the values and objectives remain consistent with tradition regardless of the utilization of more advanced software (Graefe et al., 2016; Karlsen &Stavelin, 2014). Therefore, it serves to complement the accountability function of journalism, primarily focusing on the application of abstraction and automation of information (Linden, 2017). In contrast, automated journalism goes further. Advances in information technology, linguistics, and natural language generation have enabled for algorithms to independently write news stories from structured and machine-readable data (Graefe et al., 2016). Defined by Lewis et al. (2019), automation in journalism encompasses any process or system of news production controlled by mechanical or electronic devices, with no or minimal external influence. Narrowly defined within digital journalism, automation primarily refers to AI-driven processes utilizing structured data availability and algorithms for inference (Lewis et al., 2019). Moravec

et al. (2020) and Dalen (2012) describe it as the transformation of extensive data files into news texts through algorithms, devoid of human intervention.

Automated journalism encompasses tasks such as news reporting, writing, curation, and data analysis, all performed by software programs (Lokot & Diakopoulos, 2016). Danzon-Chambaud (2021) highlights the automatic generation of journalistic stories using software and algorithms, with minimal human involvement post-initial programming. Built on natural language generation (NLG), automated journalism utilizes pre-written templates filled through specific rules or machine learning techniques that learn language usage patterns from large corpora of examples (Danzon-Chambaud, 2021; Diakopoulos, 2019; Graefe, 2016). The predominant technologies in this area of journalism research include news writing software or programs like Automated Insights: Wordsmith or Quakebot. However, other technologies also automate journalism-related content, such as chatbots engaging in direct exchanges with readers about specific news topics (Lewis et al., 2019).

Indeed, news organizations began implementing news chatbots into their operations in 2015, primarily through private messaging services (Zhang et al., 2022). Social media serves as the most common channel for deploying these chatbots (Zhang et al., 2022). The later offer various functions such as answering questions, pushing quizzes, providing subscription services for push notifications, and offering news summaries (Jones and Jones, 2019). The Guardian, a British newspaper, has been a pioneer in Europe regarding bots (Veglis et al., 2019). Starting in 2010, they conducted two projects automating sports news generation by combining statistics and historical information of teams and players with pre-made phrases and connectors. A year later, they developed an app for automated news searches via Twitter and launched the Guarbot a program in 2014 to complement financial information with complex data without relying on journalists for this task (Sanchez-Gonsalez, 2017). The Guardian also introduced a chatbot on Facebook Messenger, by sending them news briefing every morning with the top news stories). Additionally, Maniou and Veglis (2020) demonstrated the increasing prominence of chatbots on news platforms during crises like the COVID-19 pandemic. These chatbots effectively provided timely and accurate information to a broad audience, thereby enhancing the social responsibility aspect of crisis reporting. They emphasized that chatbots on news platforms can fulfill the crucial role of delivering timely and accurate information during crisis situations.

Therefore, numerous examples from news agencies, public, and private media have confirmed the effectiveness and advantages of AI tools across different stages of the production

process, including news or content production, reporting, fact-checking and verification, data analysis, writing, and voice modulation (Noain-Sanchez, 2022; Zorina & Osipovskaya, 2021). According to Noain-Sanchez (2022), the use of AI in newsrooms is seen as a way to augment journalists' capabilities, save time, and increase accuracy, diversity, relevance, timeliness, efficiency, and productivity in the news-making process. These improvements not only aid journalists in their daily work but also lead to major economic benefits (Noain-Sanchez, 2022). For instance, Moran (2022) argues that AI's role in journalism is inevitable and should be used for competition, cost reduction, labor efficiency, and economic growth. Similarly, Dörr (2016) discusses the implications of AI in journalism from an economic and market-driven perspective. According to Moran (2022), AI could be a savior for journalism as it navigates a hyper-competitive and economically challenging attention economy. Indeed, media organizations, especially journalism, are facing challenges such as a shrinking advertising base, fragmenting audiences, and rising competition from mobile, social, and digital media (Thurman et al., 2017). This raises the urgency for adopting AI technologies to stay competitive and ensure economic sustainability. Authors like Pavlik (2023) says that “it’s a time of shrinking newsrooms budgets and general media austerity or push for economic efficiency”. The later indicates a period where media companies face financial constraints based on rising competition and are under pressure to optimize their resources to maintain effective work standards. Therefore, Latzer et al. (2016) identifies, among other applications, the economic potential of automated text generation, noting that AI can reduce transaction costs for journalistic text production and lead to efficiency gains. Additionally, author Dalen (2012) explains two reasons for the potential success of automated content creation. Firstly, the journalistic profession is increasingly commercialized, with a focus on business logics which means higher profit margins and lower production costs. Second, while computer-generated news articles may not match the quality of “human journalism” from major news outlets, which prioritize detail, analysis, and engaging language such as humor, they can still compete well with freely available internet content, where quality standards are lower (Dalen, 2012). Therefore, “robot journalists” possess competitive advantages like low costs, fast writing speed, and the ability to cover a wide range of events. Some journalists also acknowledge the positive aspects of the tone and perspective of articles generated by AI, noting that the same story can be presented with different writing styles (Noain-Sanchez, 2022; Latzer et al., 2016; Thurman et al., 2017). So, for publishers and many media businesses, the primary advantage

of computer-generated news is economic: computers can generate news content at a larger scale and at a lower cost than human journalists (Dalen, 2012).

A value chain is therefore established as outlined by De Sibandze (2019), which encompasses several stages in the journalistic process. It begins with content creation or collection, followed by processing and editing, and concludes with distribution. This framework mirrors the model proposed by Rosenauer (2004), which identifies writing, editing/ proofreading, and online publishing as key phases in journalism. Indeed, Mcnair (2005) defines journalism as the discipline of timely reporting events across different levels, from local to international, achieved through information gathering via interviews and research for publication or broadcast (Mcnair, 2005). Various types of journalism exist, spanning newspapers, magazines, radio, television, and the internet, each evolving over time through different styles and media formats (Eaman, 2009). Despite this diversity, the foundation of journalism is rooted in key principles, including intelligence in research, a commitment to freedom of speech, dedication to truth and accuracy in reporting, and adherence to ethics (Pavlik, 2013). Sylvie (2001) emphasizes journalism's purpose as truth, delivered by those loyal to serving the citizens rather than profits and guided by principles of verification and accountability. Ultimately, the goal of journalism is to inform the public about important events and issues, providing a fair and balanced account by gathering, assessing, creating, and presenting news and information to the public in a clear and accurate manner (Pavlik, 2023).

In the writing phase, journalists typically begin by researching a topic and conducting interviews with sources to gather information (Pavlik, 2023). However, it may also begin with an event, idea, or creative inspiration, as suggested by scholars Tuazon et al. (2020). Subsequently, journalists contemplate and determine what kind of story is newsworthy based on news values (Tuazon et al., 2020). Guidelines for writing news stories emphasize focusing on the most current, significant, and relevant information, and employing communication techniques to make the news understandable, credible, and engaging (Grunwald, 2005). Therefore, sources play a crucial role in this process. While maintaining a degree of skepticism, journalists place varying levels of trust in sources depending on the type of information they provide (Tuazon et al., 2020). During the research process, journalists utilize fundamental skills such as information gathering, interviewing and feature material selection (Grundy, 2007). They may also attend events or meetings to acquire firsthand knowledge of the subject they are covering (Pavlik, 2023). Once all necessary information has been gathered, journalists proceed to write a story or create a news report that presents the information clearly and concisely

(Pavlik, 2023). During this process, journalists may follow a particular structure that reflects their writing style. A journalist's style in news writing encompasses various elements, including language usage, narrative voice, and techniques, as well as the angle and forms of journalistic pieces (Tuazon et al. 2020). These elements demonstrate how journalists innovate and think creatively to produce their work (Tuazon et al., 2020).

In the editing and proofreading phase, editors and journalists primarily focus on refining the wording, phrasing, ideological content, artistic quality, and depth of knowledge in works, while also enhancing format, style, and letter or character size (Tsang, 2014; Jing, 2007). For Tran et al. (2023), editing is a critical aspect of manuscript preparation, involving reviewing, revising, and enhancing written content to enhance its quality and coherence. Effective editing aids authors in conveying their ideas more clearly and persuasively, improving readability and flow, and ensuring that the manuscript meets the requirements of publishers, journals, or media outlets. Therefore, editors play a vital role in maintaining the quality of the manuscript while preserving the author's voice, mediating between the advice of reviewers and the author's intentions (Tsang, 2014). A commonly understood role of the editor is that of a gatekeeper who guards against poor-quality manuscripts, flawed arguments, inappropriate research methods or sources, or even plagiarism or other forms of misconduct (Jing, 2007). Editing also helps identify and address factual, conceptual, or logical inconsistencies, enhancing the accuracy and reliability of the manuscript. It involves a review and feedback process through corrections. Tran et al. (2023) describe the traditional editing process, starting with an assessment of the manuscript's overall structure and content, followed by detailed line-by-line editing for style, grammar, and punctuation. Ultimately, articles undergo final copy-editing, proof corrections, layout, and typesetting to ensure they meet the publication standards set by the publisher (Flanagan et al., 2018). This process is essential to ensure the articles resonate with readers, align with ethical considerations, and are valued for their validity, significance, and originality before being accepted for publication, typically by the editor-in-chief, producer, or publisher (Wolfle, 1948).

Once the editing and proofreading are completed, the distribution process begins, and the articles or news pieces are disseminated through various channels such as social media, the internet, journals, magazines, and more, often accompanied by promotional efforts. Gaunt (1992) provides insights into the different levels, channels, and methods of distribution, both nationally and locally, and examines factors influencing them, including tradition, geography, demographic variables, laws, reading habits, transportation networks, lifestyles, and market

forces. For instance, Ju et al. (2014) demonstrated the effectiveness of Facebook and Twitter as news platforms, assessing audience reach, the relationship between social media and print/web readerships, and the contribution of social media to web traffic and advertising revenue. In this competitive landscape, newspaper publishers must navigate various distribution channels and select systems that align with their industry position and economic objectives (Min, 2008). Their competitive advantage depends on a combination of three main channels: newspaper distribution, advertising, and online content (Min, 2008).

2.2. Benefits of Automated Journalism

In the above value chain of journalistic processes, experts like De Sibandze (2019) believe that AI is revolutionizing the practice of journalism for the best in three significant ways: automating reporting, providing faster insight, and lowering barriers to entry. For instance, De Sibandze (2019) suggests that automated reporting enhances coverage, trading activity, and market liquidity, thereby strengthening the market—an argument echoed by Van Dalen (2012) and Moran (2012) regarding AI's role in economic growth. Furthermore, AI provide faster insight by instantly reacting to real-time data, outlining stories for news publishers. This technology provides publishers with a broad range of free, interactive data visualizations covering diverse topics like entertainment, sports, and news (De Sibandze, 2019). Zorina & Osipovskaya (2021) support this, highlighting AI's effectiveness in real-time news detection and tracking. Through data collection and categorization, AI can monitor numerous sources, including social networks and comments, or detect breaking news based on repeated keywords in real-time.

Several commercial applications have emerged in this field, such as News Tracer from Reuters, NewsWhip from the Associated Press, Bertie from Forbes, Quakebot from the Los Angeles Times, and Social Media Radar (Zorina & Osipovskaya, 2021). These tools enable access to data via platforms like Reuters Open Media Express, and once integrated into a publisher's website, the data visualizations are continuously updated (Underwood, 2019).Therefore, according to De Sibandze (2019), AI tools can also lower barriers to entry for journalists by enabling them to tell new types of stories that were previously impractical due to resource constraints, or limited data availability. Caswell & Dorr (2018) support this notion, emphasizing that artificial intelligence (AI) enhances journalism by facilitating the creation of more detailed and intricate narratives about events. This improvement is particularly noticeable when AI systems utilize structured event and narrative data, which are methodically organized

and categorized, thereby facilitating data availability and access for the research of a particular information. This aspect of increased data availability is highlighted as another positive aspect of AI by Stray (2019). Journalists typically invest significant time in collecting data from diverse sources. However, with appropriate metadata and integration with existing data provider search systems, AI assistants can suggest scraping or purchasing necessary records to address queries. Additionally, they can assist in managing and tracking public records requests, streamlining access to data (Stray, 2019).

Zorina and Osipovskaya (2021) highlight AI's ability to facilitate personalized content delivery strategies, an increasingly popular trend among news publishers. Personalization in journalism refers to the utilization of software algorithms to predict readers' content preferences, enhancing user engagement and gathering valuable user data (Thurman & Schifferes, 2012). As users become more selective in their information consumption, media outlets are adopting personalization techniques in various aspects such as headlines, text content, front pages, delivery timing, and personalized recommendations (Zorina & Osipovskaya, 2021; Thurman & Schifferes, 2012). Implemented on news websites, mobile devices, and social networking platforms, AI-driven personalization helps differentiate from competitors, improve retention, and foster user loyalty. By analyzing user data such as browsing history and engagement metrics (likes, comments), AI algorithms generate personalized content experiences, enhancing user retention. This concept is further exemplified by Ford & Hutchinson's (2019) study, which examined the utilization of newsbots by the Australian Broadcasting Corporation (ABC), launched in 2016. These newsbots go beyond automated headline delivery to offer news in a conversational format within private messaging services. The Australian Broadcasting Corporation's chatbot fosters informal and intimate relationships between journalists and audiences, enriching their news experience and forging new relationships (Ford & Hutchinson, 2019). Jones & Jones (2019) further reinforce the significance of news chatbots in promoting conversational journalism approaches. These approaches aim to engage individuals who typically do not consume news by utilizing new technologies to create informal, interactive, and novel formats. In their research, they investigated the use of chatbots at the BBC, with the aim of cultivating a youth market for accurate but accessible news. They emphasized the importance of adopting a less formal and more conversational style to attract younger readers (Jones & Jones, 2019).

Additionally, Zorina and Osipovskaya (2021) emphasize that AI tools can automatically generate news pieces from datasets. This enables media outlets to meet the increasing demand

for fact-based news, especially among local communities and minority audiences. This is particularly vital in regions where local newspapers struggle with staffing challenges and reduced coverage. Moreover, Stray (2019) highlights that AI tools empower journalists to explore new story angles that were previously challenging due to resource constraints or technical limitations. Indeed, AI is described as capable of identifying patterns, uncovering social issues, and revealing hidden stories within data, leading to the creation of unique narratives (Stray, 2019). Consequently, this enhances the diversity of journalistic storytelling, as many data-driven investigative stories are often one-of-a-kind. Therefore, AI not only helps journalists find and produce stories that would otherwise be impossible but also enables them to address pressing issues such as the abandonment of rural villages in Spain by personalizing content and increasing coverage of local events, ultimately contributing to societal problem solving effort (Stray, 2019; Sanchez- Garcia et al.,2023). Additionally, AI tools can free journalists from repetitive tasks or activities that require little to no qualification (Noain-Sanchez, 2022). With this liberation, journalists can dedicate more time to engaging tasks such as investigative reporting, conducting interviews, and crafting elaborate stories, rather than spending valuable time on tasks like transcribing data and writing news stories one by one (Zorina & Osipovskaya, 2021).

Furthermore, Miranda et al. (2019) identify another crucial role of AI in fact-checking and misinformation detection, particularly in newsrooms. They highlight that their automated fact-checking platform accurately predicts claims 58% of the time and returns relevant evidence 59% of the time, aiding journalists in their newsroom workflow. Its significance has been underscored due to the heightened concerns and efforts in combating misinformation. This contributes to upholding journalistic integrity and ensuring that readers receive reliable information. Moreover, the integration of AI-driven virtual assistants in news dissemination, similar to everyday chatbots like Alexa and Siri, excel at basic tasks like checking the weather, while also adding a new dimension to audience interaction. The study by Reynolds (2017) show that chatbots, are a new generation of intelligent machines that can read news articles and discuss them with humans, overcoming the limitations of current voice-activated assistants. Finally, the research conducted by Sanchez- Garcia et al. (2023) sums it all. They conducted interviews with innovation heads of Spanish companies specializing in AI development for journalism. They found a growing interest in AI among media organizations, with companies focusing on information gathering, content distribution, and monetization. The profitability of

AI implementation was recognized, with benefits including reduced workload (13%), lower costs (4%) and increased audience engagement and loyalty (9%) and adverting (4%) among others.

2.3. Audience's Perception of AI Integration in Journalism

Considering AI's positive effects, it has also been in a few cases well received by audiences. A controlled experimental study conducted by Zarouali et al. (2020) investigated whether people are more likely to accept a news article containing conflicting views when delivered by a chatbot compared to the same article on a news website. The results showed that individuals were more agreeable to a counter-attitudinal news article when it was delivered by a news chatbot rather than on the website's article. This suggests that chatbots can lower the threshold for engaging with news content containing opposing views, leading to increased agreement and perceived credibility. This, in turn, could contribute to informed public discourse and reduce polarization in society (Zarouali et al., 2020). Additionally, in the study by Wolker & Powell (2018), a controlled experiment was conducted to investigate whether audiences can distinguish between human-produced and various types of automated journalism. A mixed European nationality audience of 300 European news readers participated in the study, being exposed to news articles produced by algorithms and human journalists. The results showed that generally, these readers perceive automated journalism as equally credible as human content, except in the case of sports articles, where it is deemed more credible. Addressing the primary question of the research, no differences were found between automated, combined, and human journalism in terms of source credibility, while small differences were detectable for message credibility (for sports articles). Additionally, the study conducted by Wu (2019) supported this perspective. Through an online experiment involving 370 adult participants recruited via Amazon's Mechanical Turk (MTurk), the research explored how source and journalistic domains influence the perceived objectivity, credibility, bias, and overall quality of news stories. Within the framework of the cognitive authority theory, the study revealed that auto-written news stories were perceived as more objective, credible (both in terms of message and medium credibility), and less biased compared to other sources. Such study was further explored by Yu & Huang (2021) who suggested that these findings were influenced by cultural factors. A case study conducted in South Korea revealed that both the public and Korean journalists expressed higher trust in the work of algorithms compared to journalists (Jung et al., 2017). This inclination stemmed from the public's negative perceptions of news media and

journalists due to unethical practices, prompting a desire for new communication technologies (Yu & Huang, 2021). This demonstrates not only the effectiveness of chatbots in performing journalistic tasks but also their potential preference among users.

2.4. Journalists' Perception of AI Integration in Journalism

Audience's preference raises concerns among many journalists and authors, such as Pavlik (2023), regarding the real risk associated with the potential displacement of human workers by AI. The study by Kim & Kim (2018) thoroughly examined the three perspectives that journalists may have regarding the introduction of AI in their workplace. They explored journalists' perspectives on robot journalism, using Q-methodology to categorize 47 journalists from 17 South Korean newspapers into three distinct types. Type 1 journalists believe that human journalists won't be replaced by robots due to crucial limitations robots face in journalism. While robots excel at data retrieval and processing, they lack the nuanced understanding and ethical reasoning essential for news preparation. Consequently, their role is confined to specific tasks like factual reporting and data collection. Type 2 journalists see robots as potential rivals in their profession, fearing a decline in journalism quality and status. They doubt robots' ability to enhance newspaper companies' earnings and view them as useless for core newspaper functions. In contrast, Type 3 journalists hold a more positive view of robotic journalism, acknowledging its limitations but envisioning positive outcomes like revised and in-depth news stories. They exhibit less concern about status decline, viewing risks as manageable and potential for beneficial change (Kim & Kim, 2018). This paper has categorized the research findings according to these types. The group with the most positive view on AI but with the least findings was categorized as type 3. For instance, in a qualitative study conducted by Yasin et al. (2021), which involved in-depth interviews, the use of AI by journalists and its associated threats and benefits in journalism were explored. The study identified the use of AI by both Pakistani and foreign journalists, along with the perceived threats and benefits. Most respondents mentioned the adoption of AI in their work or organizations, while some expressed concerns about job loss. However, the majority of journalists found AI to be useful, making their work easier, faster, and more efficient, particularly in areas such as research, editing, and newsgathering (Yasin et al. 2021). Additionally, Thurman et al. (2017) delved into the growing prevalence of automated journalism, driven by factors such as the availability of data, the rise of digital news consumption, and advancements in algorithms. Their study offers insights from professional

journalists across various news organizations, including major players like the BBC, CNN, and Thomson Reuters. These journalists have firsthand experience with robot writing software provided by leading technology suppliers. The findings shed light on journalists' perspectives regarding the limitations of automation, particularly concerning the sources and discernment of news. Nevertheless, journalists anticipate that automated journalism will continue to grow, enhancing the depth, breadth, specificity, and immediacy of available information.

Then there were those in the middle, who believe that AI is useful and growing, but they don't necessarily think they will be replaced by it. This perspective aligns mostly with type 1, which emphasizes that they won't be replaced by AI due to its limitations. Three main limitations were identified based on research. First, according to Macková & Mařík (2023), automated journalism exhibits superiority over human journalists in specific areas, yet it still lacks creativity, an aspect where artificial intelligence remains unable to replace humans. According to Malmelin & Nivari-Lindström (2015), creativity is fundamental in journalism, it reflects the human way of thinking, encompassing creative writing and interpretation, which AI algorithms struggle to replicate. Latar (2018) notes that AI algorithms are confined to the conceptual framework designed by humans, limiting their ability to exhibit the highest level of creativity required for tasks like evoking emotional responses such as empathy or laughter in readers or conducting investigative work. The study conducted by Ellekrog (2022) supports this notion. They examined 13 interviews with journalists and researchers who are closely involved with AI and robo-journalism in Europe. They found a significant issue with AI: it struggles to produce creative content like humans can. Many journalists emphasized the importance of creativity because it helps to captivate readers, not merely convey facts. The interviews underscored six crucial creative tasks: generating ideas, sourcing information, writing engagingly, selecting appropriate platforms for publication, disseminating stories, and breaking away from conventional storytelling methods. Çelik (2022) discusses the capabilities and limitations of robots journalists, highlighting their ability that while they can mimic human behavior to some extent, they lack sensitivity and creativity of thought. The author expressed that the sensitivity of the robot increases with the amount of emotion and thought data loaded into it, but it cannot originate emotions or original ideas independently. Humans, on the other hand, possess innate creativity and emotional depth. Therefore, the fundamental disparity between humans and AI lies in the realm of thought, where AI cannot fully grasp or experience emotions like humans. While AI can imitate human behavior based on data inputs, it cannot replicate human feelings or intuition, thus remaining limited in comparison to human

journalists. Emotions for the robot become behaviors and therefore considered part of the writing process (Çelik, 2022). According to Whang (2024), the absence of emotional depth or creativity of thought in chatbots like ChatGPT may result in them failing to grasp the nuanced and culturally diverse aspects of academic writing. Consequently, their responses might overlook crucial subtleties and context-specific details essential in scholarly communication, leading to the overuse of certain phrases. Therefore, the role of journalists, especially editors, remains crucial. When reviewing or editing content, it is vital to identify and replace these overused phrases with more diverse and contextually appropriate language to enhance the overall quality of the text and avoid clichés (Whang, 2024). Dalen's research (2012) further emphasizes the later by expressing that some journalists find computer-generated language to be somewhat dull or clichéd. Journalists possess unique abilities to inject humor and craft more intricate and varied sentences, which are considered competitive advantages. They have analytical and creative skills, along with distinct personalities, enabling them to produce stories with perspective, in-depth analysis, and surprising insights. Journalists are trained to cover breaking news, conduct investigative reporting, and present behind-the-scenes reports, showcasing skills that cannot be replicated by algorithms. These characteristics have long been associated with quality journalism, although they differ from the skills typically highlighted, such as factuality, objectivity, simplification, or speed (Dalen, 2012). Finally, Ali and Hassoun (2019) highlight the limitations of algorithms in generating outputs beyond the constraints of their original programming framework, which ultimately prevents them from achieving the highest levels of creativity. But the study also identifies professional and ethical issues raised by artificial intelligence in journalism, including undermining creativity, lack of monitoring, bias, transparency, fairness, data utilization, and data quality. Despite advancements, AI has not yet reached a stage where it can fully replace human journalists in performing these tasks. Therefore, there remains a continuing need for human input in journalism, at least to supervise robots' journalists.

Second, according to research by Serdouk & Bessam (2023), journalists argue that article creation systems will not replace human journalists in the future because "human audiences want to read opinion and analysis, not just structured data processed by an algorithm" (p.107). This limitation is based on audience preference. Although it was observed by Jung et al. (2017) that some audiences may prefer AI due to their trust in it, there is also evidence that human newscasts may still be preferred over AI voices, for example as they elicit greater

cognitive activity and trust from listeners (Gong, 2023). In the research by Gong (2023), this study found that human newscasters generate greater cognitive effects compared to AI voices. Though an EEG – based experimental study which looks at the brain waves of the subjects, this researched aimed to investigate the psychophysiological effects of the media in Chinese contexts when different agents (AI or human) broadcast different types (emotional/neutral) of news. They found out that the listeners' cognitive activity was greater when listening to the audio of a human voice newscast than AI synthesized voice broadcast, and these conditions suggests that people's brain have better ability to process and understand auditory information and store working memory for human voice news than for AI-synthesized voice news. Indeed, these findings were backed also in writing journalism by the study of Graefe et al. (2018). In this online experiment to study people's perception of automated computer-written news. Nine hundred eighty-six subjects rated two articles on credibility, readability, and journalistic expertise. Consumers find human journalist newscasts more enjoyable than computer generated content. Indeed, the subjects rated articles declared as human written always more favorably, regardless of the actual source. Where news consumers get more pleasure out of reading human-written as opposed to computer-written content. Finally, Clerwall's study (2014) provides support for this perspective by conducting an experimental methodology where respondents were exposed to different news articles written either by a journalist or generated by software. The study aimed to explore how readers perceive software-generated content compared to similar content written by journalists. Respondents were then asked to answer questions about how they perceived the articles in terms of overall quality, credibility, objectivity, and so on. The findings suggest that while software-generated content is perceived as objective and although not necessarily distinguishable from content written by journalists, it is mostly descriptive and boring. Therefore, it may seem like journalists still believe they have an advantage over robots, but it all depends on the preferences and attribution of trust by the audience, as well as on the capabilities of both AI and journalists. Because, if some readers cannot distinguish between automated content and content written by a human, it suggests that both are performing adequately or inadequately. Therefore, to maintain their advantage, journalists will have to use their skills, such as creativity, which AI lacks, to remain distinct.

Third, Komatsu et al. (2020) suggest that the lack of ethics, particularly regarding data transparency, in AI is what prevents it from posing a significant threat to journalists' roles. If AI were to replace journalists, it would entail a complete transformation of journalism's fundamental principles. Their study reports findings from interviews with journalists to

understand their perceptions of how AI technologies may support or undermine professional values such as truth, impartiality, and originality. Human journalists, as highlighted by both Sylvie (2001) and Pavlik (2013), are guided by ethical principles such as honesty, fairness, and accuracy, with a commitment to serving the public interest and holding power accountable. However, according to Komatsu et al. (2020), AI appears to lack these ethical standards. They argue that journalistic values are essential, shaping not only news production practices but also the perception of journalism's societal role. Author Kim (2019), also believesAI would be lacking in these morals, particularly when it comes to the significance of accurate, clean data and for transparency and disclosure policies. According to Macková, V., &Mařík, R. (2023), transparency involves being open about how data is collected and used while avoiding unnecessary data collection. Ensuring reader trust is essential, which requires making the underlying data available for interaction. Leppänen, et al. (2017), defined transparency as trust in the system that converts data into an article. Moreover, data quality is crucial, as bad data means a bad story (Kim, 2019). To give the most accurate story possible, data must be as objective, clean, and sorted as possible, just like when using data in any article that is produced by a human journalist. This holds true for AI in terms of both the data gathered during story discovery and the data utilized to train models. Otherwise it could lead to data bias which was explored by Mattas (2023), Deng & Lin (2023) and Chowdhury & Haque (2023) as a tendency of machine learning models to replicate and even amplify biases in the data used to train them. Therefore, regardless of individuals' concern for transparency, journalists must ensure that their sources are accurate and disclosed for the effective communication of information in this context (Kim, 2019). The study by Monti (2019) provides further support and insight into these concerns. Monti's (2019) research highlighted the ethical issue of insufficient data source knowledge, which renders information too opaque for journalistic scrutiny. AI tools often obscure how information is obtained, posing challenges for journalists in understanding their sources (Monti, 2019; Deng & Lin, 2023). Additionally, this raises liability issues, particularly in the realm of defamation. In traditional journalism, individuals responsible for published content are held accountable, but if AI generates the content, liability shifts to editors or publishers. This highlights the importance of transparency in data sourcing, including identifying the data's origin, accuracy, and integrity (Monti, 2019). While some datasets may be publicly accessible, others may require access requests, and some data usage may even be illegal (Monti. 2019). Given the potential for AI misuse explored by Guo et al. (2023) and Ray (2023), transparency regarding data sources is crucial to maintain journalistic integrity and

trust. Moreover, as highlighted by Grunwald (2005) and Tuazon et al. (2020) sources play a critical role in the journalists process and they should be chosen wisely, accurately, and legally, underscoring the importance of ethics in journalism. Ultimately, the discrepancy in ethical understanding between AI and human journalists emphasizes the importance of human involvement in maintaining journalistic integrity and societal trust.

In Salnikova (2019)'s study they concluded, that overall, journalists widely agree that while robots may offer assistance, they also come with limitations and the potential to adversely affect journalism by disrupting its core values and work dynamics. This concern arises because technological advancements bring new practices into the newsroom, requiring new technical skills and job roles, and possibly leading to changes in employment dynamics (Moran & Shaikh, 2022). In Jamil's (2021) study, qualitative in-depth interviews were used to explore how Pakistani journalists perceive artificial intelligence (AI) machines. Employing purposive sampling, the researcher conducted sixty in-depth interviews with working journalists (40 male and 20 female) from Pakistan. The study highlighted a growing recognition among journalism scholars of the role of AI and automation in newsrooms. This role is aimed at saving time, enhancing efficiency, and addressing the challenges posed by the increasingly complex global news media landscape, a perspective that aligns with type 3. However, responses from interviewed journalists indicate that a lack of education about AI within the journalism field poses a significant obstacle to its effective integration into their daily work routines. Consequently, this is where the line to type 2 journalists is crossed, perceiving AI as threats.

The latter notion was supported by Noain-Sanchez's (2022) study which delved into perceptions surrounding the adoption of AI technology in journalism, particularly focusing on the attitudes of journalists and professionals in the documentation area. Experts noticed that while professionals in documentation were more open to new technology due to their continuous skill development, journalists were more hesitant. Their resistance stemmed from a lack of knowledge and understanding about AI, as shown in sensationalized headlines and distorted perspectives in news coverage. Despite some journalists using AI tools, many still feel uneasy about its integration into newsrooms due to confusion and fear. The instability in the media industry also adds to these concerns, highlighting broader challenges related to digitalization and economic crises. This suggests that journalists see AI as a bigger threat when they don't fully understand it, leading to journalistic anxiety. According to Ras (2023) automation anxiety encompasses fears related to automation in journalism, including concerns

about algorithm bias, information bubbles, and deep fakes. However, it also involves apprehension about the "job-killing effects" of technology, as highlighted by Akst (2013). Defined by Eißer et al. (2020), it therefore reflects professionals perceived risk of job automation, which can influence their acceptance of chatbots in both their work and life.

Moran & Shaikh (2022) have expressed that journalistic anxiety over technology is longstanding and, given the upheaval of the profession through digitization, not entirely unfounded. Supported by Akst (2023) they question whether the rapid advancement of technology, with machines now far surpassing human intelligence, will result in widespread displacement. According to popular opinion, the answer appears to be affirmative, with ample alarming data reinforcing this belief (Akst, 2023). Indeed, statistics have shown frequent layoffs of human journalists in news outlets. For instance, the Bureau of Labor Statistics (2016) reported that American newspapers employed close to half a million people (458,000) in 1990. However, by 2016, this figure had decreased significantly to 183,000, marking a decline of more than 60 percent. Further, projections suggested that this trend would continue, with further declines expected by 2024. Additionally, the news sector has alone lost 2,681 jobs in 2023 in the US according to research by Fu, LaForme& Jones (2023). The media has experienced 20,342 job cuts, marking the highest year-to-date figure since 2020 (Fu et al. 2023). These statistics are not encouraging and may even suggest that since the introduction of GPTs such as ChatGPT, the decline of journalist jobs has worsened, fueling fear and perceived threat among journalists toward AI tools. Kim & Kim (2018) also delved into how concerns about status contribute to significant anxiety, particularly regarding job stability, as robots are integrated into newsrooms. They argue that the presence of robots threatens the exclusive position and social prestige traditionally held by human journalists. Baldessar et al. (2022) support this notion and highlight the challenges faced by journalists in maintaining their professional qualifications and significance in newsrooms as artificial intelligence disrupts traditional news production processes. They argue that the emergence of AI-powered news writing has disrupted the hegemony of human journalists in journalistic routines that were previously exclusive to them, leading to discontent and resistance to change. Studies have observed that the AI journalism phenomenon is driven by the economic benefits of AI in media businesses, as examined by Dalen (2012) and Latzer et al. (2016). However, journalists already faced immense market pressure resulting in economic, professional, and confidence crises in journalism (Komatsu et al., 2020). The traditional advertising-based business model is no longer sustainable, and newsrooms faced increasing commercial pressures, leading to

intensified competition (Komatsu et al., 2020). Therefore, AI has arrived at a challenging time, as expressed by Serdouk & Bessam (2023), who argue that media institution owners are unlikely to sacrifice economic benefits to cater to human journalists who cannot compete with machines. As a result, journalists must now double their efforts to maintain their significance in journalistic production, further contributing to their apprehension toward AI.

Studies have highlighted the competitive challenge posed by robot journalists for human journalists. According to Latar (2019), to compete effectively, human journalists must embrace a mindset of innovation and constantly seek new storytelling approaches. This requires familiarity with scientific analysis methods, as well as a broad education encompassing arts and philosophy to foster creativity. Additionally, human journalists need proficiency in utilizing digital tools for efficient data mining and developing novel story formats. Furthermore, Serdouk & Bessam (2023) gathered 16 opinions on the future of human journalistic jobs under AI, sourced from personal interviews with researchers in AI and information technology studies, as well as secondary sources targeting elite researchers and experts. They assert that bot algorithms demonstrate the ability to analyze vast amounts of data and produce highly accurate output, suggesting that they may soon rival human journalists in all journalistic tasks. Consequently, some argue that it is inevitable that technology will continue to progress in this direction, regardless of resistance. Additionally, resisting new technology will not impede its advancement. Serdouk & Bessam (2023) further express that necessity drives invention, and if a machine can perform a journalist's tasks, it indicates a lack of requisite skills (Serdouk & Bessam, 2023). Miroschnichenko (2018) also firmly asserts that robots are set to replace journalists, necessitating human journalists to demonstrate their ability to outperform robots. As routine journalistic tasks become automated, journalists must elevate their work by offering more creativity, depth, and context to survive in the evolving landscape (Dalen, 2012). However, Miroschnichenko (2018) study also predicts that AI advancements in data processing, accumulation, and understanding human reactions will reshape the future of media. Firstly, algorithms are continually enhancing their ability to process big data, potentially surpassing human creativity. Secondly, the accumulation of vast datasets will enable algorithms to analyze audience reactions and optimize content performance. With the proliferation of data on the Internet, algorithms can monitor, gather, and analyze journalistic texts and audience reactions to optimize engagement metrics such as likes, reads, reposts, and comments (Miroschnichenko, 2018). The author therefore asserts that since robots can assess the appeal of headlines, topics, and keywords by analyzing human reactions, it already gives them an

advantage over human editors for example. Thirdly, AI will strive to understand human reactions, integrating biometric data to gauge audience preferences with great precision. Algorithms currently rely on analyzing online interactions like likes and reposts, but with access to non-verbal cues such as body language through technologies like webcams and microphones, they will be able to calculate inexplicit reactions instantly, by scanning the movement of pupils, hearing an increase in breathing frequency, while detectors added to touchscreens could sense the heartbeat or perspiration, and so on. By leveraging the abundance of data, algorithms can refine their understanding of human perception, even in areas traditionally considered subjective, such as creativity. Furthermore, research has demonstrated that AI tools can exhibit creativity. Maiden and Zachos (2022) introduce JECT.AI, a digital tool designed to enhance journalist creativity by leveraging natural language processing, creative search, and interactive guidance to uncover innovative ideas, perspectives, and voices for article writing. JECT.AI integrates these features to support journalists in exploring fresh angles and voices when composing new articles. Miroschnichenko (2018) therefore assesses that contrary to popular belief, this competition is not in its early stages but rather nearing its conclusion, by predicting that in the quantitative aspect, human journalists have already been surpassed, and their defeat in the qualitative realm is imminent within the next 5 to 7 years.

2.5. Editors' Roles & AI

As established by Rosenauer (2004) and De Sibandze (2019), writing is a multifaceted endeavor that involves a systematic progression through various stages. According to Duffy (2021), editors are often underrated despite being a powerful force in the newsroom. While journalism scholarship has extensively studied reporters, managers, and audiences, editors are often overlooked and lumped under the general term journalist (Duffy, 2021). However, editors play a crucial role in directing reporters, managing newsroom operations, and shaping audience engagement. Harrison (2006) defines an editor as the liaison between journalists and top organizational levels, responsible for maintaining control in the newsroom and ensuring adherence to organizational news policy. According to Thompson & Rothschild (1995), the fundamental role of an editor is to refine documents by utilizing their writing expertise, understanding of readers' perspectives, and authority over content. While they adhere to rule based changes guided by external standards, they differ in their willingness to employ personal judgment to cater to audience needs and acquire authority through their role as language specialists and emphasis on teaching within their organization (Thompson & Rothschild,

1995). Within journalism, editors hold a significant position, evaluating the alignment between reported events and journalistic processes, thereby contributing to the credibility and societal value of news (Duffy, 2021). They navigate between providing informative content and catering to the interests of their organizations' commercial needs, often limiting topics that may not attract revenue (Jenkins, 2016). Therefore, editors serve as the bridge between writers and readers, determining what gets published and shaping stories through various editorial processes such as framing and gatekeeping (Klein et al.,2019). They influence both the selection and presentation of stories, impacting what readers perceive as important, an effect known as agenda setting, and through word choice, story arrangement, and other elements, editors also shape the narrative's presentation, a process referred to as framing (Klein et al. 2019).The latter was supported by Koch et al. (2018) highlighting the dual role of editors in employee magazines, balancing between public relations and journalism to meet both management's interests and employees' need for impartial information. Therefore, editors set content standards based on what sells while maintaining honesty and editorial integrity by prioritizing employees' perspectives in reporting (Jenkins, 2016; Koch et al.,2018).

Caelleigh (1993) underscores the crucial role of editors in upholding the integrity and ethical standards of journalism by implementing publication policies, enforcing standards, and addressing misconduct. While editors are not accountable for the accuracy of published research, they must promptly investigate allegations of misconduct and inform relevant parties, such as authors and reviewers' institutions (Caelleigh, 1993). The mission of the publication shapes editors' decisions, as they strive to meet both reader expectations and their publication's brand identity, reflecting a tension between serving the public and meeting commercial demands (Caelleigh, 1993). Poutanen et al. (2016) shed light on the ethical dilemmas editors encounter as they navigate new forms of advertising while upholding journalistic integrity. In response to shifts in the media landscape, organizations are exploring alternative business models, including digital advertising like sponsored content and native advertising. Editors play a pivotal role in these changes, shaping policies and guiding innovation. According to Knebusch & Carlson (1991), effective editing involves prioritizing the reader's experience, delivering fresh content, and understanding the audience to create a distinctive publication that captivates and surprises. Editors must continuously adapt, keeping aware of changes in their field, society, and competition, to set their magazine apart and make it indispensable to readers. Zhi-bin (2003) supports this notion, emphasizing editors' duty to prioritize reader service and innovation to enhance professional skills and elevate news publishing standards. Professional

editing remains vital in curating quality within the extensive range of online content and upholding accuracy and truthfulness, particularly in an era dominated by social media and nonprofessional news sources.

In conclusion, editors are indispensable to the operation of media outlets as they navigate the delicate balance between editorial integrity and market demands while addressing ethical considerations and adapting to technological advancements. Their role is vital for the survival and quality of periodicals, relying on a blend of social responsibility, language proficiency, extensive knowledge, and effective information literacy (Guo -fang, 2012). Koch et al. (2018) emphasize the importance of journalistic skills such as text editing, topic selection, and discerning relevance. They also highlight the importance of effective communication which is also crucial enabling editors to engage openly with people and demonstrate a deep understanding of human nature, cultivated through professional socialization. Therefore, their multifaceted role requires a diverse skill set to ensure the magazine's success and relevance in an ever-evolving media landscape. This goes beyond the traditional view of editors solely assessing manuscripts and addressing copyediting issues, where editors could potentially be replaced by various text editor tools enhanced with artificial intelligence (AI), such as ProWritingAid, Ginger, Hemingway Editor, Grammarly, or ChatGPT (Rosenfeld, 2010; Özçelik (2023). Where AI-enhanced text editing tools or systems analyze and detect textual faults using machine learning algorithms.

While chatbots in journalism have been extensively studied with Zhang et al. (2022), Veglis et al. (2019), Sanchez-Gonsalez (2017), and Maniou & Veglis (2020), there is also a growing interest in using AI tools for editing. This area of focus is gaining attention as a new and expanding field, particularly with the emergence of AI technology. Several studies have been conducted to explore the utilization of AI in editing and proofreading and to assess the efficacy of AI editing/proofreading tools compared to human editors/proofreaders. Heintz, Roh, and Lee (2021) conducted a comparative analysis study to assess the accuracy and effectiveness of the AI proofreading tool Wordvice in comparison to the proofreading tools of two applications (Google Docs and Microsoft Word) and expert human editors/proofreaders. The study involved evaluating the ability of Wordvice to identify and correct both objective errors (grammar, punctuation, spelling) and subjective stylistic issues across various academic domains. The sample dataset comprised 1,245 sentences from eight academic domains. The findings indicated that the Wordvice AI Proofreader performed at or near the level of human editors in identifying errors and offering suggestions, demonstrating high accuracy and

effectiveness. Additionally, Wordvice outperformed other proofreading applications such as Google Docs and Microsoft Word, showing greater consistency and performance. Overall, the study concluded that the Wordvice AI Proofreader is comparable to human proofreaders in functionality and offers promising outcomes in automated proofreading and editing tasks.

Moreover, the study by Latar (2015) introduced the application of Robot Editors, particularly in the context of Google's Google News Service. In Google's News Service, decisions regarding lead stories and homepage content were made entirely by computers, without any human intervention. The product manager of Google News proudly stated that the process was fully automated, relying on a "source credibility measure" to determine which stories to feature (p.73). Google News, launched in 2002, operates as an aggregation service, utilizing an algorithm to sift through thousands of news sites and automatically select stories for publication, along with relevant links. The service aggregates stories from a vast array of sources worldwide, covering numerous languages and regions. This automated process allows for continuous updates and coverage, operating 24/7 without the need for human editors. These studies highlight the real possibility that AI tools may become as proficient as human editors, posing a significant threat to the role of human editors in the future.

2.6. ChatGPT & Editing

Research has explored the beneficial applications of ChatGPT specifically, in the realms of editing and proofreading. For instance, Whang's (2024) study highlighted the positive impact of integrating ChatGPT into the editorial workflow for academic publishing. First, the study illustrated how ChatGPT would aid in conducting preliminary literature reviews by identifying key themes and methodologies. Second, it showcased how ChatGPT could serve as a training tool for novice editors and reviewers, guiding them to provide constructive feedback. Third, the study demonstrated that ChatGPT could assist in language editing, particularly beneficial for non-native English-speaking editors, ensuring clarity and coherence in editorial work and maintaining international academic publication standards. This observation aligns with findings from Kim (2023) and Alyasiri et al. (2024), emphasizing the benefits of ChatGPT over paid English-editing services due to its ability to generate refined sentences rapidly and at no cost, thus enhancing accessibility and efficiency for authors. Similarly, Castillo- Gonzales (2022) and Tran et al. (2023) explored ChatGPT's potential as an academic and manuscript editing tool. They found that ChatGPT can process large text volumes, detect errors, enhance writing quality, suggest improvements, and address various editing aspects such as grammar,

style, coherence, and formatting. Berrezueta-Guzman et al. (2023) conducted a controlled comparative study on the effectiveness of ChatGPT-4 in editing Spanish literary and academic books. They found that while ChatGPT-4 demonstrated high accuracy and efficiency in grammatical corrections, it faced challenges in context sensitivity, bibliometric analysis, and interaction with visual content. The study concluded that human editors are still necessary as ChatGPT-4 lacks the nuanced understanding and editorial judgment of humans, despite being an advancement over ChatGPT. This finding therefore suggest that the same results would apply if it were to be conducted with ChatGPT. Furthermore, Seghier (2023) highlights that while AI-assisted tools like ChatGPT can enhance readability and produce text similar to that written by humans, maintaining ethical standards is crucial. Authors, or editors, have the responsibility of reviewing text to ensure accuracy, impartiality, and alignment with their original ideas (Seghier, 2023). This ensures accountability and maintains the integrity of the scientific, journalistic, and broader knowledge creation processes, safeguarding against inadvertent errors, biases, or misinterpretations that could compromise the reliability and credibility of published works.

2.7. Review of Similar Studies

Therefore, the results are inconclusive, prompting further research to ascertain the truth by directly interviewing editors. Consequently, two previous studies were found to be particularly relevant. First, Al Sawi et al. (2024) conducted a study to explore the perceptions of professional editors and proofreaders towards the use of AI tools such as Grammarly, PerfectIt, Quillbot, Trinka, Hemingway Editor, and ChatGPT in editing and proofreading. With Grammarly, ChatGPT, and PerfectIt being reported as the most used tools among the surveyed group (used by 13, 8, and 7 of the participants, resp.) The study involved interviewing 17 participants who were purposively sampled from a society of professional editors and proofreaders in Egypt. The participants, primarily in their 30s and 40s, were diverse in terms of educational background and professional experience. The findings revealed that all participants used AI tool in editing and proofreading, and generally viewed AI tools positively, citing benefits such as time-saving and enhanced productivity. However, they also highlighted challenges such as accuracy issues and ethical concerns associated with AI tools. While some participants expressed optimism about the future development of AI in the field. The majority of the participants agreed, however, that AI will witness significant developments, and this will have a notable impact on the profession, being a potential threat to their profession. The study

concluded that attitudes towards AI tools in editing and proofreading vary among respondents, indicating the need for further research to explore these attitudes in depth.

In Özçelik's (2023) study, the main objective was to evaluate ChatGPT compared to a human language expert in proofreading skills. The study aimed to determine whether ChatGPT could potentially replace human proofreaders as a reliable alternative. For the study, seven academic research abstracts from various fields were collected, and each abstract was proofread by both a human language expert and ChatGPT. Participants were then asked to identify which version was proofread by a human and which by ChatGPT, providing their reasons for their choice. The study found that while ChatGPT was helpful in correcting spelling errors, punctuation, and capitalization rules, human proofreaders were more effective in addressing content, grammatical accuracy, and vocabulary issues. Human proofreaders also demonstrated better understanding of context, tone, and subject matter expertise compared to ChatGPT. Human proofreaders could also communicate directly with authors, providing personalized feedback, which ChatGPT lacked. Moreover, human proofreaders could comprehend emotions and cultural references, providing a human touch to the proofreading process, which ChatGPT was unable to do. Overall, the study concluded that while ChatGPT has its merits in certain aspects of proofreading, it cannot fully replace human proofreaders due to its limitations in understanding context, tone, subject matter expertise, and human emotions.

Nonetheless, Al Sawi et al. (2024) and Özçelik's (2023) studies highlight the lack of studies on the use of AI in editing. Understanding how professional editors perceive AI tools is crucial, given their significant role in the publishing industry. As a result, this study aims to explore the impact of AI tools like ChatGPT on professional editors' work, based on their expertise and viewpoints. Previous research has focused on the broader field of journalism and writers, overlooking the perspectives of editors, who are at the forefront of news and information dissemination, particularly in digital magazines. Additionally, this study stands out by specifically examining ChatGPT, a controversial AI tool in recent years, and investigate how editors view its usage, whether positively or as a threat. AI applications in sectors like medicine or law, this study considers audiences' and users' perspectives. By empowering professionals in journalism, especially editors, to voice their insights and opinions on the present and future impact of AI tools like ChatGPT in editing, this research fills a gap in the literature. Through capturing editors' perceptions regarding the strengths, weaknesses, opportunities, and threats of AI, this study provides a deeper understanding of the editing landscape.

Chapter 3 - Internship Experience at XOXO Fashion Magazine

3.1. Overview

I embarked on an enriching internship journey at XOXO Fashion Magazine, a digital magazine located in New York, from August 13th to December 18th, 2023. Originally, I had applied for an internship at Fashion 360 Magazine, another digital magazine based in New York, seen in Figure 1.

Source: Fashion 360 Magazine

Fig. 1- Fashion 360 Magazine's digital cover page

However, when Ikponwosa Edorisiagbon, the co-founder of Fashion 360 Magazine contacted me, she shared her ambitious vision of launching her own magazine — XOXO Fashion Magazine —one rooted in broader values of inclusivity across communities. This struck a chord with me, as I firmly believe fashion should be a realm where everyone finds belonging, irrespective of their background. While Ikponwosa had previously co-founded Fashion 360 Magazine, she now aspired to steer her own ship, molding her magazine in her image. She left Fashion 360 Magazine, which subsequently transformed into XOXO Fashion Magazine. Initially, both magazines coexisted, with XOXO being launched separately. However, Fashion 360 has since ceased to exist, as all its links now redirect to XOXO Fashion Magazine, seen in Figure 2. This opportunity not only allowed me to witness the inception and pre-launch phases of XOXO Fashion Magazine but also to contribute as one of the original writers, actively shaping its trajectory and growth through promotional efforts.

Following my first interview, I had the opportunity to select my role within the magazine, choosing among writer, editor, and or social media content creator positions. Given my passion for writing, I decided to focus solely on this aspect to develop my skills to the fullest. The internship journey commenced with a team meeting on August 13th. At that time, our team consisted of approximately seven people, reflecting the magazine's pre-launch phase. As we eagerly anticipated the magazine's launch on September 1st, 2023, we worked on writing

articles and getting content ready, engaging in collaborative efforts for ensuring seamless preparations for the magazine's debut.

Source: xoxofashionmag.com

Fig. 2 – XOXO Fashion Magazine's logo

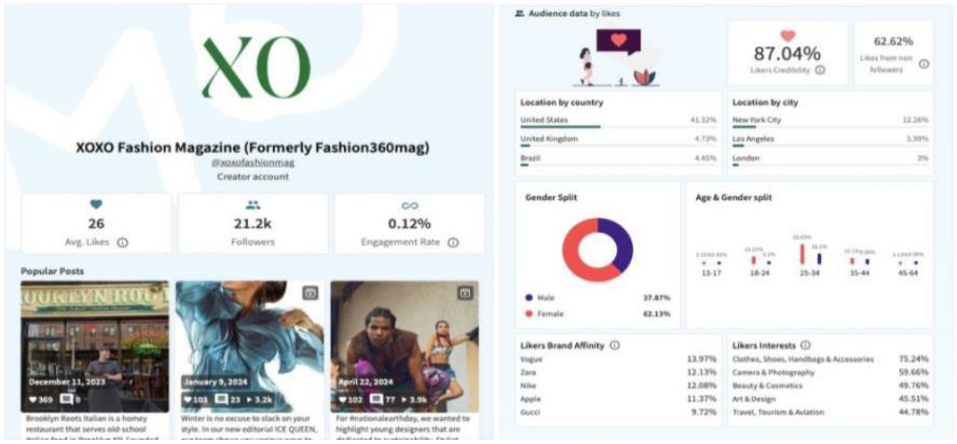
The internship itself was fully remote, which gave me the flexibility to work when it suited me best, although I was expected to be on call 24/7. We often had late-night meetings via Google Meet to make sure our articles were perfect before publication the next morning. While I aimed to put in 2-3 hours of work each day, I didn't hesitate to put in longer hours—sometimes up to 10 hours or more—when deadlines were approaching, ensuring that each piece met the high standards I set for myself. As a result, I spent five months as a web content writer, working from Kent, Ohio, where I had settled after participating in an exchange program between Kent State University and Universidade Catolica Portuguesa. Despite the physical distance from the magazine's headquarters in New York, I made it a priority to visit when needed, staying connected and contributing effectively to our shared mission.

3.2. XOXO Fashion Magazine

XOXO Fashion Magazine is an online publication owned by Ikponwosa Edorisiagbon and published by Stop Embassy Management. It focuses primarily on fashion, beauty, and entertainment. The magazine covers five main topics with numerous subtopics, including Fashion (designer brands, editorials, events, and fashion weeks), Beauty (hair, makeup, nails, skincare), Entertainment (celebrity style/beauty, movie/TV show/music), Lifestyle (health/fitness, art/culture, food/travel, home), and Shop XOXO featuring brand collaborations. With a mission to spotlight emerging talent in fashion, beauty, and entertainment, XOXO Fashion Magazine is committed to inclusivity, welcoming everyone regardless of gender, background, or class. Their main tagline, "Your Fashion Bestie," embodies this commitment and is proudly featured at the end of each article. Formerly known as Fashion360 Mag, which focused primarily on high fashion editorials, XOXO sets itself apart by prioritizing inclusivity and emerging talents over high fashion exclusivity. While the magazine covers all major

fashion weeks globally, it places particular emphasis on events like New York Fashion Week, offering extensive coverage of runway shows, presentations, backstage insights, and more. These events, which occur twice a year in the big four fashion capitals, New York, London, Milan, and Paris, bring together prominent and new figures in the industry and serve as focal points of the fashion calendar. The articles in XOXO Fashion Magazine place a strong emphasis on showcasing both emerging and renowned designers, featuring their shows, models, backstage scenes, and overall tone. Additionally, they cover a wide range of beauty related topics, offering advice on trying out healthy lifestyle choices and exploring new emerging products to help readers feel their best. The main message promoted is one of adventure and positivity, encouraging readers not to be afraid to try something new and embrace body and mind positivity.

Across social media platforms like Facebook, Twitter (X), and Instagram, the magazine maintained a strong presence, with the social media team actively engaging in content creation. Despite being a relatively new publication, they've experienced rapid growth in their online following. Within just two and a half months after their launch, they had already amassed 20K followers on Instagram. Currently, they have 21.2K followers on Instagram and 1.7K on Twitter eight months post-launch. To better understand the audience demographics of the magazine, I've closely analyzed their Instagram followers as shown in Figure 3, using Modash, a platform that provides data on influencers. Through this analysis, it was discovered that their audience primarily consists of females between the ages of 25 and 34. This insight allowed the content to effectively target and resonate with this demographic, ensuring that it truly speaks to their interests and preferences.

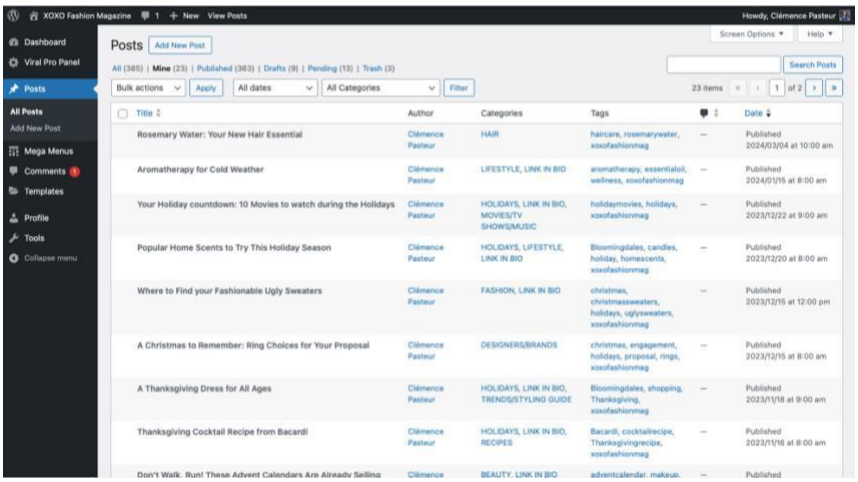


Source: Modash

Fig. 3 – XOXO Fashion Magazine's Instagram audience demographics

3.3. Internship Organization

The structure of XOXO Fashion Magazine revolves around three key areas: writers, editors, and social media content creators. Upon joining the internship, participants were given the flexibility to choose one or multiple positions. Personally, I decided to concentrate solely on writing, to really dive into the art of journalism, exercise autonomy and free creativity over my work and research and learn the ropes of effective writing practices. At XOXO, writers were tasked with brainstorming article ideas and/or selecting topics from a pre-established list, aiming to produce a minimum of four articles per month. We operated on a forward-thinking schedule, drafting content several weeks or even a month in advance to allow editors ample time for corrections, proofreading, and final approval from the editor-in-chief and managing editor before publication. All of these tasks were conducted on WordPress, as seen in Figure 4, the primary platform used at the magazine.



Source: WordPress

Fig. 4 – WordPress view of published posts on XOXO Fashion Magazine

Our editor-in-chief served as the primary authority responsible for granting publication approval. She was the individual to whom we presented our ideas, received approval, and whose feedback held significant weight in our improvement for future tasks. Additionally, we had another supervisor, the Managing Editor, who provided feedback, assigned articles and brand collaborations, and managed our schedules, including setting deadlines for each article. Moreover, she maintained an Excel sheet containing everyone's articles and corresponding editor assignments for smooth coordination and supervision.

Each month, we centered our content around a specific theme. For instance, we explored topics such as age, holidays, health, and notably, fashion weeks. During the latter, the overall schedule became particularly hectic. The objective was to write and publish as many articles as possible, resulting in extremely tight deadlines, often just a few hours after attending a show. To attend these events, we had to inform our editor-in-chief, who would then add us to the guest list. Consequently, I attended several shows in New York, conducting backstage interviews at events like the Altuzarra show and participating in press meetings, including one where I had the opportunity to interview Kate Barton personally. To illustrate the frenetic pace, I had to attend two shows in a row, traveling from Manhattan to Chinatown (13 km apart) and within an hour of finishing my last interview, I had to submit my articles. The situation quickly becomes tense because there is hardly any time between interviews to start drafting an article. This often requires working on articles while on the go during transport and ensuring they are publication-ready, complete with images and all necessary elements. Sometimes, due to tight deadlines, it would even mean for articles to be published immediately without going through the usual revision process by editors. In such cases, it would simply be a matter of obtaining approval from the editor-in-chief and then proceeding with publication. So, in these situations, the writers are basically doing all the heavy lifting (attending the shows, interviewing, writing, revising, illustrating), while the editor-in-chief simply gives the green light and gets it out there. As writers, we played a crucial role in both the quality and quantity of articles published during this time.

However, teamwork was paramount regardless of fashion weeks. To ensure an article's publication at the magazine, a structured process was in place. If a writer had an idea for an article that wasn't part of the pre-approved list of topics, we would send an email with our pitch and await approval from our editor-in-chief. Once approved, the writer would begin drafting the article and submit it into WordPress upon completion. Subsequently, a designated editor would review it, providing feedback and suggesting any necessary rewrites. Following this, a second editor would conduct further editing. Ultimately, the managing editor or editor-in-chief would offer final comments, and upon their approval, the editor-in-chief would schedule its publication. Furthermore, the magazine would hold team meetings to welcome new members, discuss potential themes for the month, and brainstorm article ideas. Additionally, after completing each article, each writer would meet with the editor-in-chief. I usually had at least one meeting per week with my editor-in-chief, who also served as my internship supervisor. However, we often found ourselves having additional meetings for last-minute touch-ups and

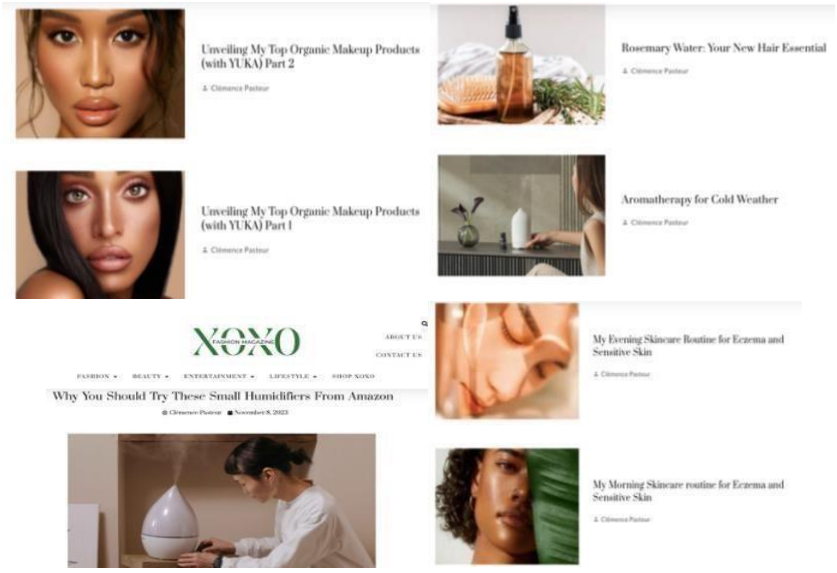
learning sessions, which sometimes took place late at night or were arranged on an improvised basis. As a result, I had to be on call 24/7 due to the absence of specific hours or a fixed timeframe in the internship setup.

To manage my workload, I allocated a few days (2-3) each week for research and brainstorming to generate ideas for upcoming issues, dedicating the remaining days (3-4) to writing articles. I also reserved time for illustrations/photography and layout design, as writers were responsible for these aspects as well. Writer's collaboration was also central to the magazine, with initiatives like "our editorial's favorite fragrances or NGO's" requiring contributions from all editorial teams. Additionally, we would have to actively participate in the magazine's social media presence, engaging in challenges and promoting articles to increase followers. Finally, we were assigned to write articles aimed at enhancing brand collaborations, in line with the internship's objective of integrating marketing elements. This experience not only allowed me to learn the responsibilities of a dedicated journalist but also demonstrated how collaboration and brand marketing can significantly enhance a magazine's quality and credibility.

3.4. Role Description

3.4.1. Writing

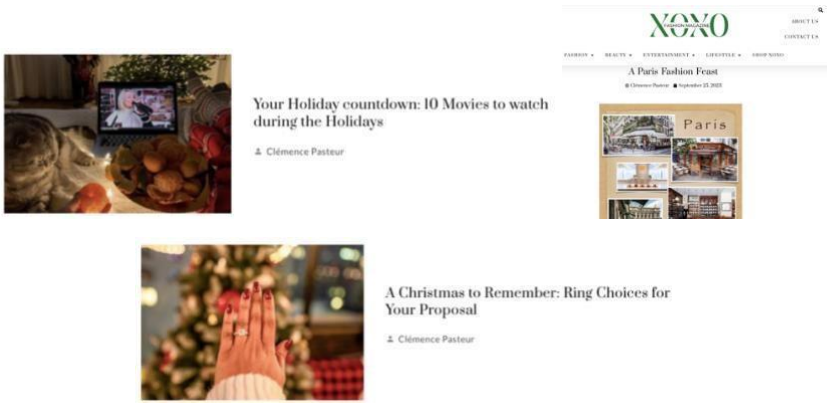
In total, I have written 27 articles for the magazine, although not all of them were published for diverse reasons such as timing or image issues, editorial decisions, or shifting priorities. Nonetheless, as of today, 23 of my articles have been published in XOXO Fashion Magazine. Initially, my focus was primarily on fashion, aligning with the onset of Fashion Weeks in September. However, they quickly transitioned to topics centered around health and cosmetics. Indeed, from the start, I expressed to my editor-in-chief my desire to expand our coverage on natural cosmetics, brands, and lifestyles, stemming from my personal struggles with eczema and a family history of cancer. Consequently, she enthusiastically supported my vision to expand the magazine's focus towards health and clean beauty. The aim was for readers to resonate with the articles, whether they shared similar skin or health concerns, or simply leaned towards a more natural lifestyle.



Source: xoxofashionmag.com

Fig. 5 – Health and clean beauty articles authored for XOXO Fashion Magazine

I delved into topics such as clean makeup, creams, and skincare routines tailored specifically for individuals dealing with skin issues, as seen in the articles published in Figure 5. Additionally, I explored the benefits of aromatherapy and shared insights on natural homemade hair products like rosemary water, catering to those seeking small lifestyle improvements with small budgets. Furthermore, I covered practical subjects such as suggesting 10 free movies to watch on various platforms during the holidays, and curated guides on all types of engagement rings for both men and women. Additionally, I provided recommendations for different types of restaurants to dine at during Paris and New York Fashion Weeks, catering to all kinds of budgets, as shown in Figure 6.



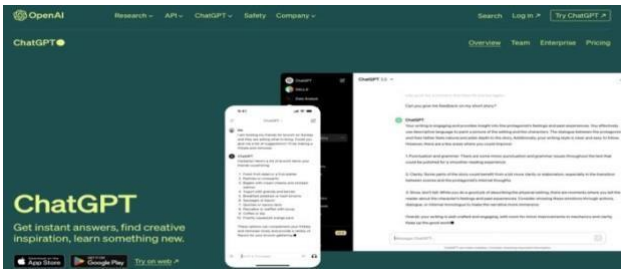
Source: xoxofashionmag.com

Fig. 6 – Miscellaneous topics authored during XOXO Fashion Magazine internship

This approach ensured that the content remained accessible to a broad audience, offering options suitable for various preferences and financial means. My overall goal was to provide relatable content that readers could connect with on various levels. Because not everything has to be perfect or out of reach to be good for us, or for us to like it. I aimed to offer practical advice and suggestions that resonate with everyday experiences and demonstrate that even small, attainable improvements can have a positive impact on our lives. The magazine allowed me to have a voice and find my voice, particularly in an industry like fashion that can often feel exclusive and out of reach. This way, I believe I successfully connected with the audience without any barriers or taboos, allowing them to feel welcomed into the world of fashion alongside me.

In my writing process, I closely adhered the steps outlined by the author Laplante (2018), which describe four key stages: inventing, drafting, editing, and revising. Typically, I started by getting an idea, either from brainstorming or stumbling upon something that piqued my interest (usually on social media) and that seemed beneficial for the magazine. Then, I would email both my editor-in-chief and managing editor to get their approval before diving into my research. During the research phase, I would delve deep into my chosen topic, refining my idea and figuring out how I want to shape my article. If needed, I would conduct interviews to gather more information and insights. Once gathered everything I needed, I would start writing in an informal yet informative style, making sure to get all the important details across. This initial writing usually took a few hours and then I would move on to editing, the longest task. For this one, I followed a two-step process. First, I edited the text myself, aiming to refine my meaning, correct any errors, and elevate the formality of the language. I ensured that the message was clear and concise, and that the tone aligned with the desired level of professionalism and AP journalism standards. Once these initial adjustments were made, I would move on to the next step. Considering that English is not my native language, I utilized ChatGPT or Quillbot (another AI paraphrasing tool) to further enhance the clarity, coherence, and overall quality of the text. I would rely on ChatGPT's editing capabilities to assist in refining the language and structure of the text, ensuring that the final version met the highest standards of language fluency and quality. For example, when opening ChatGPT, as illustrated in Figure 7, I would give it the prompt of 'correct' this paragraph, 'edit' or simply 'paraphrase' this sentence. The latter would correct any grammar, punctuation, or misspelling errors in my pasted text, and when asked, give me alternative words or sentences to make the coherence of

the text better. Finally, I would review ChatGPT's suggested revisions and deny or incorporate them into my text.



Source: OpenAI

Fig. 7 – Image of ChatGPT in use on OpenAI's website

There was never any explicit discussion or prohibition regarding the use of ChatGPT or any AI tools for the magazine. Therefore, I personally opted to use it for two main reasons. First, it saved me time with the editorial process by reducing the need for extensive rewrites and clarification requests from the editor, thereby minimizing useless interactions with other editors. Second, I found that ChatGPT often understood the intended meaning of my sentences and offered rephrased versions that better aligned with AP style guidelines. These revisions not only sounded more natural and fluent but also enhanced the overall quality of the writing. Once I completed this editing process, I would submit the article on WordPress and proceed with formatting, adding pictures, etc. Upon finishing these tasks, I would mark my work as completed on the Excel sheet, signaling to the editors that they could begin their editing process.

Through my experience with the publication of 23 articles, I observed that editors rarely made changes to my work. In the few instances where changes were made, they typically involved either additions to enhance the content or minor adjustments, particularly in terms of (informal) tone, to ensure compliance with AP style guidelines. Editors would implement changes directly into the writer's WordPress drafts without providing explanations, leaving authors to discover alterations on their own. Consequently, I found it beneficial to directly discuss specific changes with ChatGPT, thereby avoiding struggles to preserve my intended meaning. Moreover, after using ChatGPT for a pre-editing of nearly all my articles, I noticed that very little was changed apart from the scenarios mentioned earlier. This led me to question whether editors truly played a significant role in the editorial process of the magazine, especially given that there are two editors at task for each article. If all writers were responsible for generating ideas, writing, editing with ChatGPT, and managing layout and visuals, with

only the editor in chief's approval required for publication, it would raise questions about the editors' level of involvement. This realization marked the beginning of my research journey. Through my personal experience with ChatGPT and my observations of the differing roles of editors compared to writers and other contributors at the magazine, I felt compelled to investigate the editors' perspectives. It became evident that understanding their viewpoint was crucial for a comprehensive debate on the topic and the importance of their place in the magazine, regardless of the capabilities of AI editing tools like ChatGPT.

3.4.2. Research/Interviews

Alongside writing, one of the major skills I developed during my internship was research skills, which form the basis of an idea and its development. According to author Davies (2015), research in journalism is incredibly important because it is "of direct relevance to the public" and leads to new or substantially improved insights. Hirst (2022) agrees, emphasizing its significance in understanding context and ensuring accuracy and validity in reporting. When it came to research, I adjusted my approach based on the topic at hand. For trendy topics or new products, I often turned to social media to gather opinions. But for medical subjects, I typically relied on websites endorsed by physicians and official products websites, as well as reviews. Since our magazine covers trends, fashion, emerging products, and influencers, social media became our primary research tool. So, when it came to arranging interviews, we mainly reached out through social media or used contacts provided by our editor-in-chief.

Interviewing is equally important in journalism because it is the "key to most stories you will write", providing new facts and revealing the background of events and developments (Broersma, 2008). Moreover, according to Carpenter et al. (2017), interviewing is crucial in journalism as it is the dominant approach in newsgathering and demands a wide range of competencies. These include listening, interaction management, research, empathy, articulation, self-presentation, verification, news judgment, observation, and open-mindedness. In my case, I had the opportunity to interview a few influential people, and I found that using a recorder and transcription technique made it easier for me, especially considering English isn't my native language. This method helped me accurately capture quotes and understand the true meaning they were trying to express. I have also had the opportunity to experience various interview formats. During Fashion Week, my interviews were completely unstructured, happening usually spontaneously as I didn't know which show I would cover until the day of. At the shows the interviews were either conducted in groups, allowing for questions to be

evenly distributed, or individual. These experiences enabled me to explore different interview dynamics. On the other hand, for planned articles focusing on specific issues, the interviews were more open-structured. This approach allowed for more focused discussions while ensuring the conversation remains open to cover a broad range of topics and gather as much data as possible. Whereas, given the time constraints of Fashion Week, articles needed to be produced quickly, so the interviews couldn't be as lengthy or in-depth. These experiences pushed me to perfect my skills in both spontaneous and planned interviews, adapting to different situations and extracting valuable information efficiently.

3.4.3. Marketing/ Brand collaboration

Finally, one of the last skills I honed during my time at XOXO was the magazine's marketing drive. Jang (2006) emphasizes that collaboration marketing strategies in the fashion industry effectively upgrade brand image and cut marketing costs by creating new targets, products, and promotions through successful partnerships. With this in mind, the magazine actively sought collaborations and partnerships, to establish its newly established presence. Under the guidance of the managing editor and editor-in-chief, we were tasked with creating articles to promote specific brands. This involved either building an entire article around a brand or adjusting existing articles to focus solely on the brand. I frequently explored ways to market brands such as Bacardi, Target, BlueMercury, Amazon, Bloomingdale's, and others. For example, during the winter season, I wrote an article featuring the best of Bacardi's holiday cocktail recipes, illustrated in Figure 8, all of which were available on their website and perfect for Thanksgiving. I transformed this marketing strategy into a Thanksgiving family bartender's challenge.

Source: xoxofashionmag.com

Fig. 8 – XOXO's Thanksgiving Cocktail Recipe from Bacardi article

With this technique, I engaged the reader by offering them a simple challenge and recipes to make their holiday more enjoyable with our collaborated brand, requiring only a bottle to buy! Another example, illustrated in Figure 9, was my Amazon ugly Christmas sweaters article. I provided multiple cute and fashionable ugly sweater options for Christmas, along with truly tacky ones that would add humor to the festivities. I even found options for dogs.

Source: xoxofashionmag.com

Fig. 9 – XOXO's Where to Find your Fashionable Ugly Sweaters article

This not only expanded our target audience but also highlighted the wide variety of products available on Amazon. As writers, we had to make sure our content resonated with both our readers and the fans of the brands we featured to ensure a perfect fit. So, the goal was to attract brand communities while building the magazine's own group of loyal followers. Brand communities, as explained by Stokburger-Sauer (2010) are essentially groups of individuals bonded by their affinity for a brand, engaging in collective activities to support it. These communities foster strong connections among customers, the community itself, and the brand, driving brand loyalty and advocacy (Zhou et al., 2012). They come together to achieve common objectives and share their feelings and commitments towards the brand (Laroche et al., 2012). According to Davidson et al. (2007), brand communities centered around magazines have the potential to boost loyalty, foster brand attachment, strengthen reader connections, and facilitate community formation. This reciprocal relationship enhances the credibility of both the brand and the magazine.

Finally, we explored that the magazine's industry is undergoing significant growth, particularly in the digital realm, leading to heightened competition (Davidson et al.,2007). Consequently, many magazine producers are compelled to seek innovative ways to attract and retain readers. As a new magazine, we had to be creative and attentive to current trends and the strategies of other magazines to establish credibility. Our editor-in-chief often advised us to

observe what leading magazines like Cosmopolitan and Vogue were doing, by either covering similar topics and/or finding a unique approach. Additionally, SEO optimization was crucial for expanding our magazine's reach and ensuring successful collaborations. Therefore, for each article, we had to ensure that the title was attention-grabbing, tagged relevant people and brands, and used numerous hashtags as part of our SEO strategies.

3.5. Main conclusions

Overall, this internship provided me with a deep understanding of what it truly means to be a journalist. I had the opportunity to delve into various aspects of digital media, including writing, research, illustrating (art/pictures), SEO practices, social media, and marketing, all while retaining my creative freedom. Although, it often involved trial and error, as we only received feedback after completing each article, it allowed plenty of room for improvement. We always aimed to do our best and kept refining our skills and techniques with each article. While it took me some time to become proficient in using WordPress, I'm grateful for the experience and knowledge gained. Handling every aspect of creating an article, from inception to publication, allowed me to grow tremendously. Overall, this internship not only improved my skills but also gave me the confidence to explore my creativity and produce quality content, whether with or without ChatGPT.

Part II – Empirical methodology

Chapter 4- Methodology

4.1. Study's relevance

There is a growing apprehension and debate regarding the advancement of AI and its impact on job markets and various sectors. Journalism, in particular, faces risks due to tools like ChatGPT, which possess incredible writing capabilities that could potentially supplement or replace human jobs, especially in digital magazines like XOXO. This study explores a relatively unexplored topic, particularly the use of AI in journalism. Little research has been conducted on the actual implementation of AI tools such as ChatGPT in the journalism industry, including which roles and areas utilize them more frequently or if they are perceived as taboo. Duffy (2021) has noted the underrated roles of editors, and with the rise of AI tools like ChatGPT, which excel in grammar correction and editing, the role of editors may be now more than ever at risk. Therefore, understanding how professional editors perceive AI tools is crucial, as it may provide a new perspective on these technologies and help defend editor's crucial role in journalism and particularly magazines. Consequently, this study aims to explore the impact of AI tools like ChatGPT on professional editors' work, based on their expertise and viewpoints. This study stands out by specifically examining ChatGPT, a controversial AI tool in recent years, and investigating how editors view its usage, especially in a digital magazine like XOXO Fashion Magazine. By giving editors a platform to voice their concerns and opinions about such tools, this research not only empowers their voice but also underscores the importance of their role in a magazine. Additionally, it aims to provide a deeper understanding of the editing landscape and fill a gap in the existing literature.

The methodology employs a qualitative approach through semi-structured interviews with four editors from XOXO Fashion Magazine. Additionally, interviews were conducted with four writers from the same company to explore their perspectives on the importance of the editor's role in the magazine and whether tools like ChatGPT could perform editing tasks as effectively as human editors. This comparison aimed to ascertain whether editors might indeed be at risk if writers begin utilizing ChatGPT as editing tools.

4.2. Research Question & Goals

The main goal of this paper was to uncover the truth behind the potential of generative AI tools like ChatGPT in editing skills by directly interviewing editors on three main aspects: their perceptions toward the use of AI tools like ChatGPT in editing and proofreading, their views of the benefits and challenges of using ChatGPT for editing and proofreading, and their understanding of these tools like for the future and the sake of their profession. In an industry where media outlets face increased competition and the demand for content production is higher than ever, especially for an emerging magazine like XOXO Fashion Magazine striving to establish its place in the market, this research shed light on where AI tools like ChatGPT are integrated and whether editors believe them to be beneficial for the success of the magazine. This research aimed to gather sufficient data to develop theories and address the main question of how AI tools like ChatGPT may impact editors' jobs at XOXO Fashion Magazine. The study focused on the perspectives of magazine employees, recognizing that their goals may diverge from those of the magazine in terms of success, irrespective of numerical metrics.

The interviews were divided into two parts, with the primary emphasis on editors. The three main points mentioned above were covered extensively. In the second part of the interviews conducted with writers, additional subquestions were explored regarding the topic. These included whether age and generation influence the use of ChatGPT in journalism, whether writers use AI tools like ChatGPT more than editors, whether writers view AI tools like ChatGPT in a more positive light than editors and whether writers believe ChatGPT can outperform editors in the magazine and potentially replace them.

This research followed the grounded theory, a research method that generates theory based on systematically collected and analyzed data, uncovering social relationships and behaviors of groups (Noble & Mitchell, 2016). It involves a systematic research approach for collecting and analyzing qualitative data, aiming to generate an explanatory theory from the data rather than fitting the data into an existing framework (Wainwright, 1994). This paper delved deep into the findings of editor and writer interviews to answer the subsequent questions and develop its own theories.

4.3. Data Collection

In light of this qualitative research, interviews were the chosen data collection method. Interviewing is a common method for qualitative studies, aiming to understand the experiences

of other people and their meanings (Rambod, 2019). According to Silva et al. (2006), interviews are essential for qualitative research as they facilitate a detailed understanding of beliefs, feelings, attitudes, and values. Griffee (2005) highlights that while interviewing is a useful method for qualitative research, it requires advanced questioning skills and active interpretation to effectively gather data. He further outlined five key considerations for conducting interviews. First, it is essential to identify suitable interviewees, ideally those with relevant experience, who are currently involved in the situation, and who can allocate adequate time for the interview. Second, one must determine when to conclude each interview and decide on the appropriate number of interviews. Third, choosing an appropriate location for the interview and describing this context in the final report is important. Fourth, the interviewer must formulate the interview questions carefully, spending time on their development and writing them down in advance. Finally, the researcher must decide on the method of data collection, whether it be listening only, listening and taking notes during the interview, taking notes afterward, or recording the interview.

For this research, the respondents included the four editors who have ever worked for the magazine and, to ensure balance, four writers currently working at XOXO Fashion Magazine. The interviews were conducted via email, allowing respondents to answer at their convenience and in a comfortable setting. These questions covered various aspects, including beliefs about the capabilities of AI tools like ChatGPT compared to human editors, perceived limitations or challenges of using ChatGPT for editing, and the potential for AI tools to replace human editors and journalists in the future. The latter was informed by literature highlighting the benefits of AI, such as efficiency and accuracy as expressed by Deng & Li (2023). The challenges associated with AI and ChatGPT, including privacy concerns highlighted by Singh et al. (2023), issues of accountability and responsibility raised by Ray (2023), questions of authorship discussed by Got & Katanoda (2023), and the problem of bias noted by Deng & Li (2023), were also considered. Furthermore, the importance of transparency and adherence to journalistic principles was underscored, as emphasized in works like Mattas (2023). The crucial question of job security was highlighted by authors such as Zhou et al. (2019) and Xu (2023). These sources ensured that the questions addressed some of their key points. The interviews were transcribed, and follow-up questions were posed as needed to clarify responses.

Therefore, the interviews followed a semi-structured format, with predetermined questions asked in a consistent order and email exchanges allowing further questions or clarifications when needed. Semi-structured interviews are particularly useful for exploring

complex issues and allowing respondents to raise new issues or provide deeper insights (Wilson, 2014). Conducted remotely, this interview method offered several advantages, including saving time and allowing respondents to participate at their convenience. However, it also had limitations, such as the lack of non-verbal communication and spontaneous interaction, which are vital for in-depth interviews. Written responses tend to be more reflective and less spontaneous, which can limit the richness of the data collected.

4.4. Procedure

The interviews were conducted via email at the request of most writers and editors, as it accommodated their schedules more easily. Additionally, email interviews facilitated the transcription of responses, saving both time and effort. A total of 30 to 25 open-ended questions were posed to writers and editors. The semi-structured interviews with editors and writers were organized around seven key topics. First, the interviews introduced the roles of editors and writers, highlighting their critical contributions to the publication process. Following this, participants discussed their familiarity with AI technologies, including tools like ChatGPT, both in personal and professional contexts. The conversation then moved to the use of AI tools in editing and writing, exploring whether these tools were integrated into their workflows at XOXO Fashion Magazine. Discussions on the potential benefits of AI tools like ChatGPT followed, focusing on their capabilities in writing and editing. This led to an examination of the limitations and challenges of these AI tools, such as concerns over accountability, privacy, bias, transparency, and adherence to journalistic principles. The research further explored the future of journalism, considering the integration of AI tools like ChatGPT into journalistic practices and the potential for these tools to replace human roles. The interviews concluded with a discussion on job security, particularly the perceived risks of job displacement for editors versus other roles like writers, in the context of advancing AI technology. For writers, the interview structure remained the same, but the questions were tailored to their role and responsibilities within XOXO Fashion Magazine. The focus was on whether writers relied more on ChatGPT, perceived it as more effective in editing than writing, and felt their roles were more secure compared to editors.

4.5. Participants

During my internship at XOXO Fashion Magazine, there were seven writers and four editors. However, at the time of conducting the interviews, only three editors were still actively

working. To ensure a comprehensive understanding, I interviewed these three editors, along with one editor who was present during my time at XOXO Fashion Magazine. Additionally, I interviewed four writers, selected based on an age-sampling criterion to ensure a diverse age range and mitigate any age-related biases. Therefore, a total of eight email interviews were conducted.

To maintain anonymity and confidentiality, each participant was referred to by a fashion capital, such as Paris, New York, Milan, London, Tokyo, Los Angeles, Barcelona, and Rome. The big four, representing Paris, New York, Milan, and London, were allocated to the editors, while the remaining four capitals represented the writers.

Among the editors, there were three females and one male. One of the editors, representing London, serves as the head editor of the magazine and brings with her twenty years of industry experience. Another editor, representing Paris, is a 29-year-old Paraprofessional (teacher's aide) and Freelance journalist with a PhD in Journalism of Hispanic and Indigenous descent, while the third editor, representing Milan, is a 24-year-old Hispanic male. The fourth editor, representing New York, is of Nigerian American descent and is currently a college student. This diverse group of editors reflects different cultural backgrounds and ages.

Regarding the writers, there was Tokyo, a 38-year-old woman from the Philippines working in corporate; Los Angeles, a 19-year-old student of Asian descent; Rome, a 20-yearold Italian American student; and Barcelona, a 35-year-old American. The participants collectively represented a wide age range, offering valuable insights into views on AI tools. However, there was a lack of gender diversity among the editors, as Milan was the only male editor at the magazine. Given the gender imbalance, achieving gender equality among respondents was not feasible. Thus, the selection included two editors in their twenties, one in their thirties, and one in their forties, alongside two writers in their twenties and two in their mid/late thirties.

4.6. Data Analysis

This study relied on primary data collected through interviews, utilizing an inductive approach to inquiry. Inductive inquiry, as outlined by Creswell (2009), allows qualitative researchers to develop categories from the ground up, organizing data into more abstract informational units. In methodology, inductive logic entails deriving fresh theoretical insights from unexpected research findings within the framework of existing theories (Brandt & Timmermans, 2021). Thus, it adopts a bottom-up approach, where specific observations inform the development of

broader theories, devoid of predefined hypotheses and centered solely on the data. Aligned with this methodology, the study followed the inductive category development of content analysis proposed by Mayring (2000). This method involves identifying and considering material from the data based on predefined criteria and research question and tentatively determining categories. These categories undergo iterative refinement within a feedback loop, ultimately leading to the establishment of primary categories whose dependability is assessed (Mayring, 2000). This coding process facilitated the development of conclusions directly from the collected data, with emerging theories being integrated into the analysis. The data collected from the interviews was categorized to assess the main issues surrounding the use of AI tools in editing within the context of XOXO Fashion Magazine, particularly in relation to the roles of editors.

4.7. General issues

Despite the widespread use of interviews in qualitative research, methodological and theoretical challenges persist. Nunkoosing (2005) acknowledged issues such as distinction between truth and authenticity, power dynamics, and the nature and significance of personal narratives. Indeed, participants may feel hesitant to disclose certain information, fearing repercussions on their career or at the magazine. In this research, editors' participants might have felt compelled to withhold information about their use of AI tools like ChatGPT at the magazine, as it could potentially undermine the perceived value of their role. Additionally, the written format of email interviews may have made participants less candid, as it left traces of their admissions and encouraged reflective responses rather than spontaneous honesty. These factors limited the depth and authenticity of the data collected, despite efforts to address these challenges, such as anonymization. Moreover, there might have been a tendency to provide responses that aligned with the interviewer's expectations, leading to potential interviewer influence, which is evident in power dynamics. This alignment can be influenced by various factors, including the formulation of questions and the description of the research provided by the interviewer. Another challenge lay in the subjective nature of data interpretation of people's narratives. Through careful consideration, inclusive data gathering, anonymization, and clarification with interviewees, efforts were made to mitigate these challenges and obtain accurate results.

Chapter 5 –Presentation and Discussion of Results

To answer the research's question of how AI tools like ChatGPT impact editors' jobs at XOXO Fashion Magazine, this research organized semi-structured interviews with editors and writers into seven distinct topics. The results for editors and writers are displayed in separate sections to provide a clearer understanding of each group's perspective. The initial topic involved an introduction to the roles of editors and writers, emphasizing their pivotal contributions to the publication process. Following this, participants were asked about their familiarity with AI technologies, including tools such as ChatGPT, both in their personal and professional capacities. Particularly, the discussion centered on the utilization of AI tools in editing and writing, probing whether interviewees incorporate such tools, like ChatGPT, into their work routines at XOXO Fashion Magazine. Conversations then shifted towards the potential benefits of using AI tools like ChatGPT, with considerations given to its capabilities relative to writing and editing. The latter led into an examination of the limitations and challenges associated with these AI tools, encompassing concerns around accountability, privacy, bias, transparency, and adherence to journalistic principles. The research then delved into the future of journalism, contemplating the integration of AI tools like ChatGPT into journalistic practices. This exploration included reflections on the possibility of AI tools replacing human roles. Consequently, interviews concluded in an evaluation of job security, particularly focusing on the perceived risks of job displacement for editors compared to other roles like writers, given the evolving landscape of AI technology in journalism. The results of these interviews were displayed according to these sections, except for the combination of editors' AI familiarity and their use of it, and AI and their knowledge of ChatGPT capabilities, which were combined within the same subsection to enhance coherence and clarity. This resulted in five main subsections.

5.1. Editors' Perspectives on AI

The editors interviewed included Milan, the 24-year-old and only male worker at the magazine; London, the head editor with twenty years of experience in the industry; Paris, an educator and freelance journalist of Hispanic and Indigenous descent; and New York, the 21-year-old Nigerian American college student. All of them began working at XOXO Fashion Magazine at the same time as I did, for its launch in August 2023.

5.1.1. Editor's Roles & Goals

In exploring the roles of editors outlined in the introduction part of the interview, it becomes evident that two distinct types of editors are involved in the editing process for each article. The editor Milan, elaborated on this, indicating that one editor focuses on language revision and proofreading (grammar, writing structure, and style), while the other attends to aspects such as formatting and editing (font size and image placement). He provided detailed insights into the editing process, which begins with accessing a spreadsheet provided by the editor in chief. This spreadsheet contains contact information for team members and details of articles requiring editing or writing, including draft and publishing dates. Upon locating the assigned article, editors like Milan thoroughly reviews it, paying close attention to grammar and seeking opportunities to enhance readability and engagement. Notably, he approaches editing "from the perspective of the intended audience", ensuring that the content resonates with their interests. Once he completes his edits, the article proceeds to the next editor for further refinement. Milan is the perfect example of a first editor, while London embodies the role of second editor, assuming the position of the magazine's lead editor, primarily overseeing secondary editing to ensure thoroughness. Her typical editing process involves multiple readings, starting with a general overview to grasp context, followed by corrections of grammar and syntax errors, and concluding with adjustments to phrasing and language associated with culture and style of writing. Additionally, London handles the editor in chief's personal documents and writings, alongside addressing general editing issues and specific writer concerns through regular email communication. The tasks outlined thus far align closely with what has been observed in previous literary works, such as in Thompson &Rothschild's (1995) research, expressing that editors utilize their writing expertise to enhance the quality of text while also understanding the reader's perspective and wielding authority over content to cater to audience needs.

However, according to editor Paris, the role of an editor extends beyond pre-publication article editing. In addition to checking for typos, grammar, and spelling errors, she is tasked with modifying sentences or structures to improve readability and ensure statements are not offensive or taken out of context—a crucial aspect emphasized in journalistic ethics. Furthermore, Paris attends events and conducts interviews on a case-by-case basis, particularly when a writer is unavailable. She is also responsible for generating topic ideas for future articles, occasionally writing articles herself, reviewing products, and maintaining communication with sources. This multifaceted role highlights the comprehensive nature of an

editor's responsibilities, encompassing various tasks beyond traditional editing duties. In addition to ensuring correctness and uniformity, she strives to maintain the author's voice while standardizing language to accommodate diverse writing styles and cultural backgrounds.

Thus, the question of what constitutes effective editing raised. For Paris, her primary goal is to preserve the voice of the author while maintaining uniformity in language and writing style when working on a single magazine. This objective aligns with the principles outlined by Knebusch & Carlson (1991), who assert that effective editing involves prioritizing the reader's experience, delivering fresh content, and understanding the audience to create a distinctive publication that captivates and surprises. Additionally, New York emphasizes the importance of checking research and ensuring accuracy in content. She asserts that correcting errors, whether grammatical or factual, is essential to maintaining the integrity of journalism. Therefore, for most editors, effective editing extends beyond grammar and spelling to encompass considerations of ethics, adherence to media laws, uniformity in language, and meeting audience needs. These principles are echoed in research such as Caelleigh (1993), which highlights the crucial role of editors in upholding integrity and ethical standards in journalism. Paris encapsulated these considerations perfectly:

> "*When editing for a magazine there are obvious things you want to look out for, spelling, grammar, typos, run on sentences etc. but then there are things you need to think about and take into consideration. Is the audience going to understand where this writer is going with this? And is this against media laws to say this? At the end of the day we're journalists, unless a source makes a statement that's off the record we can get away with saying almost anything but the last thing we want to do is offend our sources and tarnish the possibility of any future collaborations. That's on the side of ethics but then at the same the lines can sometimes be blurred between what's unethical to say and what is against the law to say. Media itself as much as it pains me to say, does not always have the freedom of speech under every circumstance. As an editor it's my responsibility to make sure we're not tipping that scale into liability. Also, it's my job to maintain the magazines voice.*"

Paris highlights the need to balance standard editing practices with ethical considerations, ensuring content aligns with media laws and respects sources while maintaining the publication's voice. Ultimately, she identifies four key factors guiding effective editing: readability, relatability, ethicalness, and accuracy. Furthermore, for editors like New York, effective editing requires meticulous attention to detail and a passion for grammar, as echoed by Milan[1]. Milan emphasizes the human element essential to the editing process, asserting that the task is driven by love and passion, qualities that cannot be replicated by a machine.

[1] Milan: "*The editing has to show love and passion. It has to show that the authors AND editors genuinely care for what they are writing about".*

Therefore, according to editors, editing encompasses a blend of technical expertise, ethical considerations, genuine passion for language and people's interests and a commitment to delivering quality content that resonates with both readers and magazine while upholding journalistic integrity.

Given the multitude of elements they must consider and ensure are adhered to, the question arises as to whether they believe themselves to be fundamental to the magazine. Unanimously, all four editors expressed their belief that they are indeed fundamental to the success of the magazine. For instance, Paris expressed "*Very much so. Editorial is important to the writers as well as to the magazines content. It's the same equivalence as dotting your 'i's' and crossing your 't's', without the appropriate markings, meaning and definition can be misconstrued".* Thus far, it's clear that editing and editors play a crucial role in a magazine. However, the central concern now is whether humans can surpass AI tools like ChatGPT in editing, thereby lessening its impact on their professional roles. Additionally, another question arises regarding whether AI tools like ChatGPT could (have the capacities to) autonomously handle all editing tasks, potentially removing the necessity for two separate editors at XOXO Fashion Mag. Subsequently, these questions were presented to editors later during the interview to gather their perspectives on the matter.

5.1.2. Editors & AI: Usage and Familiarity

To evaluate the editors' understanding of AI tools like ChatGPT and their capabilities, particularly in writing and editing, interviewees were inquired about their familiarity with AI. Their responses were quite similar, ranging from "*somewhat familiar*" or "*some familiarity*" to "*almost nothing I think I'm too old*." This raised the topic of age, particularly when London, aged 40, expressed unfamiliarity with AI, attributing it to feeling "too old" to grasp new technology. Interestingly, despite editors spanning ages 21 to 40, with a median age in the late 20s, even the youngest editors, aged 21 and 24, showed reluctance towards using AI and preferred to avoid it, as explored in later sections. This suggests that age may not be a decisive factor here. They mentioned instances where they had observed AI capabilities, such as generating essays or artwork, or reading about AI-operated establishments in the restaurant industry.

Therefore, when asked about the most impressive aspect of AI capabilities they knew, their responses were largely complimentary. They highlighted its speed and accuracy in retrieving information within seconds, as well as its ability to create entire articles from just

keywords, which they found “coherent and even fun to read”. Additionally, they were impressed by AI's overall comprehension of language and readability, along with its ability to mimic literary voices. However, they also expressed ethical concerns regarding AI's capacity to emulate specific individuals' voices, foreseeing potential issues in this regard[2]. Overall, their responses indicated a moderate level of familiarity with AI tools, coupled with a cautious attitude towards their potential, especially in journalism. Given this context, the research pursed by inquiring about their usage of AI tools like ChatGPT and whether they perceived it as a beneficial tool.

When editors were asked about the usage of AI tools like ChatGPT in their personal time, the responses were divided. Half of the editors had utilized such tools for writing and editing purposes in the past, while the other half had never used them at all. For instance, London and New York had never used them, while Milan had utilized them during college to assist with gathering information and structuring essays. Paris, on the other hand, had used Grammarly, another AI tool to proofread and improve style of her own papers and articles. She explained,

> "*As far as AI goes, I only have some experience using certain communication systems such as Grammarly for my own papers and articles. I know how funny that might sound as an editor, but even editors don't shy away from the occasional typos and misspellings. I think having that reassurance can be beneficial.*"

This indicates that some journalists in the industry remain curious about AI tools and their potential assistance, while others prefer to avoid them as much as possible.

Consequently, when questioned about their use of AI tools like ChatGPT for editing tasks at the magazine, the response was largely unanimous: no. Nonetheless, their justifications were interesting. Milan, for instance, explained that AI lacks the emotions and human perspective required for effective editing. He expressed,

> “*Editing for a Fashion magazine should be done by a person as people have those emotions and that human perspective of what's trendy and how to get people interested. Chatgtp itself states that it does not have emotion in the way that humans do. Compare it to the likes of a robotic floor cleaner. It goes on a designated path, without thinking, just mopping and driving around without thinking. It will never clean as efficient as a human with a mop who looks at the details of the floor and sees what parts of the floor has to be cleaned and how”.*

[2] New York: “*Once it develops the ability to mimic someone's literary voice—meaning it can write something as a certain person would—then I think that would be impressive from a technological standpoint. Though ethically I think it would cause a lot of issues*”.

Similarly, Paris emphasized that ChatGPT or any other AI tools should absolutely not be used for the magazine, stating

> "*I think using AI as a means to edit content I was hired to do defeats my purpose in the magazine. Additionally, AI although useful is still a system without thought and feelings. It can tell you grammatically how a text should read but there are certain statements that aren't based off correctness, they are statements of thought, feeling, and emotion, and the language usage is authentic to that writer or for that subject; and so, it makes sense to keep it in a 'as is' state. How sad of a world would it be if we all had one way of expressing ourselves or saying things. If we stick to grammatical correctness by definition there would be no blending of thoughts, ideas, language, etc. we would all be this one 'brain cell' sort to speak*".

These responses suggest that most editors refrain from using AI tools like ChatGPT and hold the belief that they should not be utilized, primarily because of the inherent lack of emotional understanding and authenticity in AI tools like ChatGPT. Humans, on the other hand, go beyond mere task completion, seeking out details and techniques to infuse a text with vitality and, most importantly, to tailor it uniquely to its readers while honoring the author's intention and voice.

Finally, editors' responses varied regarding their perception of colleagues who use AI tools and whether they accept their usage. Paris acknowledged that while it can be handy, there's a risk of losing the magic in an article by relying too heavily on AI[3]. She suggests that other editors might find it useful but warns against overreliance. Milan and London suggested as well that while AI tools may have their utility, they can also be seen as a form of "*lazy*" work and be frown upon in the journalism industry. Milan specifically mentioned that AI tools are acceptable only for basic tasks like spell check and punctuation. However, London highlighted that the acceptance of AI varies depending on the client, with high-tech industries more open to its use compared to independent companies that value the human touch. On the other hand, New York took a more radical stance, expressing strong reservations about using AI for tasks that require authenticity and personal input. While she acknowledged its potential in certain scenarios like editing or academic papers, she is opposed its use for tasks that demand genuine, heartfelt expression, viewing it as dishonest and potentially detrimental to one's professional integrity particularly in the context of fully generated ChatGPT articles[4].Therefore, most of the editors did not see a problem with editors who use ChatGPT for editing tasks as they see

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[3] Paris: "*I do think you lose some of that magic in your article when you subject all content to this system that is designed to in many ways think and process things for you".*

[4] New York: "*If it's something like editing, or even a college paper, I honestly don't see a problem with it. But if you're tasked with writing something from the heart, or anything else that absolutely should 100% come from you, using AI is cheap and dishonest. And you should probably be stripped from your position*".

potential benefits in its use. However, they do express some warnings and frown upon it to some extent because, as Paris once said, it defeats the purpose of what they were hired for.

5.1.3. Advantages of AI for Editors

When considering the potential advantages that AI or ChatGPT could bring to editors and the magazine, the responses varied in terms of perceived benefits, yet they were often followed by cautionary remarks. Summarized in Table 1, four main advantages were explored, including misspellings and typos, punctuation and grammatical errors, both pertaining to language revision, as well as speed and accuracy. For example, Milan highlighted benefits in terms of grammar and punctuation for the editing process, but also emphasized that "*it is not the same as a person doing so. It will lack the emotion that magazines need*". Similarly, London acknowledged potential benefits such as speed but also stressed limitations, particularly in more personal or humanities-focused areas. She noted that AI excels in technical, mechanical, biological, and medical fields due to its extensive databases. However, she expressed concern about AI's effectiveness in more personal writing areas, such as fashion, lifestyle, pop culture, and feature articles. London suggested that AI tools like ChatGPT may not be well-suited for journalism, as they might lack the nuanced understanding required for these subjects. She pointed out that AI is still very imperfect for consumer-based styles of writing, where depth and human touch are essential. Moreover, Paris' perspective on the potential benefits of tools such as ChatGPT for editing was twofold. She expressed that the major advantages of incorporating ChatGPT into the editing processes would for "*speed, accuracy, correctness and peace of mind"*. Nonetheless, she added *"I also think they pull away from the writer's voice"*. She believes that good journalism relies on storytelling that is unique, refreshing, and relatable. According to her, the strict correctness enforced by AI, including political correctness, can diminish the emotional and conversational aspects of a story, which are crucial for engaging readers. She feels that the human element in writing, which AI often corrects, is essential for making the narrative feel like a personal conversation. Therefore, most of them recognized their utility in quickly identifying misspellings, grammatical or punctuation errors, and typos, but also cautioned that they may detract from the writer's voice and the unique storytelling aspect of good journalism. While AI tools offer speed, accuracy, and correctness, they may sacrifice the emotional resonance and human-like qualities that connect readers to the narrative.

To gather more insights, editors were also asked whether they considered ChatGPT to be a useful tool for digital magazines, especially for those just starting and aiming to produce

a large volume of articles like XOXO Fashion Magazine. The editors offered diverse perspectives. Milan viewed ChatGPT as a valuable tool for increasing article production speed, particularly beneficial for magazines with limited editorial resources (solely four editors) like XOXO Fashion Magazine. Similarly, New York expressed that "*while maintaining literary honesty, incorporating that into editing ensures accuracy, keeping the new magazines from discrediting themselves and making such embarrassing novice mistakes*". However, London held a contrasting view, emphasizing the importance of a human touch and voice in fashion related content[5] . Paris took a middle-ground stance, recognizing the potential benefits of ChatGPT for efficiency but also highlighting the importance of learning from mistakes to develop writing and editing skills. She states

> "*Yes and no. I think like credit, true quality writing and editing is a right of passage. You have to make the mistakes to better understand how to fix them or why they didn't work in the first place. I think this is especially true for beginners at an advanced stage good writers and editors will be able to catch on and 9 out of 10 times it was a case of simply overlooking where as a beginner more likely won't even understand what they did wrong. The issue with AI's is that they fix the issue without even explaining the 'Why's'. Why was this not the writer word or phrasing. Why this punctuation instead of that. And so it really is just the bandage effect. A temporary fix to a much bigger issue. Which is obviously the comprehension as well as the skills needed to be able to be a quality stand-alone writer or editor*".

Paris raises two significant points: one regarding content and one concerning form. On the form side, she argues that AI may not provide explanations for its edits. However, this issue is not unique to AI; at XOXO Fashion Magazine, editors also do not explain their edits through meetings or email exchanges. In this sense, AI could potentially be an easier option by simply prompting an explanation for its edits on the spot, allowing writers to understand and possibly accept them without the need for extensive back-and-forth. This could prevent the situation where edits are made without authors even noticing, thus preserving their original work. Nonetheless, on the content front, she is right. She emphasizes that a starting magazine shouldn't focus solely on producing a high volume of articles, but rather on developing skills among their editors and writers. This involves identifying which articles work, which don't, what content resonates best with readers, and what styles of writing are most effective. It's a period of trial and error. If everything is done without reasoning, such as relying solely on AI, human skills will be lost, including the crucial human touch and reasoning needed to provide a more engaging reading experience for audiences. This question once again highlights the gray area in the research. While the results indicate that there also needs to be space for human input,

[5] London: "*Not really. People who read about fashion need a human touch, a human voice".*

experimentation, and understanding of audience preferences. It was therefore observed in this section that each time they were questioned about the benefits of AI, they felt compelled to balance their responses by mentioning a disadvantage, stressing the need for human input and emphasizing the need for cautious utilization.

Overall, it can be observed that the limited emphasis and number of advantages provided may suggest a reluctance to acknowledging the utility of AI tools like ChatGPT, especially considering the frequent necessary mention of human involvement in the editing process. The latter could indicate a fear of job displacement, as discussed in Akst (2023), which suggests that automation in journalism could lead to job loss. Alternatively, it could indicate a lack of sufficient understanding of AI's potential benefits, leading to apprehension about its use. Indeed, the number of advantages provided was notably weak compared to the extensive list explored in previous literature. Editors did not discuss benefits such as economic advantages highlighted by Latzer et al. (2016), which include reducing transaction costs. They also did not mention benefits such as time-saving and freeing journalists from repetitive tasks, as explained by Stray (2019), or advantages like diversity of tone, timeliness efficiency, and productivity, as expressed by Noain-Sanchez (2022). Additionally, they did not touch upon benefits such as fact-checking, as discussed by Miranda et al. (2019), or verification, and data analysis, as highlighted by Noain-Sanchez (2022). The latter demonstrates that many more advantages could have been discussed, and that either a lack of knowledge and/or fear could have prevented editors from providing more.

***Table 1**: Advantages of AI for Editors*

Misspelling & Typos	Punctuation & grammatical errors	Speed	Accuracy
Paris: "*I think AI tools such as grammerly and ChatGPT are great for making sure you did not overlook any misspellings, punctuations, or typos".*	Milan: *"It can be beneficial in terms of grammar".*	London: "*The main advantage is a large amount of content quickly".* Milan: *"It is a useful tool as it helps people produce articles at a quicker rate".*	New York: "*even when you're good at editing, you can still miss some mistakes. And AI, once it's accurate enough, can definitely help with that".*
Paris: "*I would say speed, accuracy, correctness and peace of mind. We would be able to catch those tricky hiccups without having to really question it or spend to much time thinking about it".*			

5.1.4. Disadvantages of AI for Editors

To understand the viewpoints of editors regarding emerging AI technology, they were asked about the primary challenges encountered by ChatGPT or AI tools in general. The later was intended to provide deeper insight into editor's understanding and opinions regarding these technologies. Eight main disadvantages were identified and listed in Table 2. These included concerns about ChatGPT's tone, job loss, emotional lack, accountability, and the question of ChatGPT's authorship, which is related to and may lead to plagiarism. Other issues involve the transparency of sources and privacy concerns due to uncertainty about where ChatGPT obtains its information and whether it retains personal data, as expressed in the research by Singh et al. (2023). Additionally, concerns about adherence to editorial principles were highlighted in terms of research integrity and all the above-mentioned factors.

Most editors agreed that the main challenge with ChatGPT lies in its tone, which consequently becomes its primary obstacle. This presents an opportunity for writers and editors to distinguish themselves by crafting a voice that resonates with audiences. Indeed, Milan notes that "*certain things may sound too monotone*", a sentiment echoed in Dalen's (2012) research, where some journalists perceive computer-generated voices as dull or cliché. Additionally, London insisted that its main challenges, were "*the human voice, sense of humor, a feeling that the content has been written for the consumer*". The latter notion was echoed in Sarode & Bhamare's (2023) research, which highlighted the absence of emotional intelligence in ChatGPT. They noted that ChatGPT may struggle to respond to emotional cues, such as sarcasm or humor, leading to tone-deaf or insensitive responses. Therefore, the main challenge lies in the humanistic aspect of writing that lacks feeling in the machine. Moreover, there was one editor who offered a unique perspective but still managed to tie it back to human concerns. New York raised her biggest concern and challenge when it comes to ChatGPT: "*Taking opportunities away from humans*". This statement reinforces the idea that AI is perceived as a threat to humans and their jobs. It was intriguing to have this perspective incorporated, highlighting the clear fear of technology and the ongoing advancement that indeed results in people losing jobs.

Within these challenges, various aspects were highlighted, such as privacy concerns, as seen in Singh et al. (2023) research, issues of accountability and responsibility, as noted by Ray (2023), questions of authorship, as addressed by Got & Katanoda (2023), and the problem of bias, as raised by Deng & Li (2023). Additionally, the importance of transparency and

adherence to journalistic principles was underscored, as emphasized in literary works such as Mattas (2023). Indeed, all editors expressed significant concerns about these issues. For example, Milan illustrated concerns about authorship and privacy through an AI art example, stating

> "*AI art uses art from so many different sources without their consent. If I put in a prompt for the AI to draw a Pikachu from the Pokemon Series, it will steal art from many people to use all of their art as examples and draw an image of a Pikachu based off of other people's work. This is plagiarism".*

Copyright concerns or the question of authorship consequently raise the issue of plagiarism. Indeed, while ChatGPT still lacks a framework regarding the latter, nobody knows how to navigate if someone appropriates its output or the ways ChatGPT gathers information from various sources, leading to instances of both direct and indirect plagiarism. London also highlighted accountability concerns, stating, "*If an article is offensive and written by AI, what are you going to reply to someone offended: the computer wrote it?*". New York echoed this sentiment, emphasizing that most people cannot take accountability when things go wrong, suggesting that blaming AI could weaken society's overall accountability[6]. Furthermore, the importance of transparency, as a critical editorial standard established by Leppanen et al. (2017), was discussed. New York expressed concerns about transparency, highlighting that it will undoubtedly be an issue. This lack of transparency could lead to violations of principles such as editorial standards, as established by Pavlik (2013), which are dedicated to truth, intelligence in research, accuracy in reporting, and adherence to ethics. At some point, people may struggle to discern between content generated by humans and AI, potentially leading to a situation where most articles are assumed to be AI-generated. Therefore, the integration of AI into journalism practices may indeed lead to the normalization of opacity regarding information sources. This inability to verify reliability could erode trust in the journalistic system. Leppanen et al. (2017) and Kim (2019) underscored the critical role of data quality in upholding journalistic integrity. Without transparent sources, the very essence of journalism and its editorial standards could be compromised. Consequently, upholding editorial principles such as transparency becomes essential, as they currently serve as the primary means of distinguishing human work from machine-generated content, particularly in terms of quality.

[6] New York: "*Most people can't take accountability when things go wrong, so I'm sure blaming AI will save a lot of people, a.k.a. It will weaken society's accountability*".

Overall, it seems that compared to the disadvantages expressed in the literature, editors have identified most of them, except for the issue of outdated data. As ChatGPT was trained on data from three years ago and hasn't been updated since, it lacks current information as expressed by Singh et al (2023). Nonetheless, in the advantages section, London had expressed concern about AI's effectiveness in more personal writing areas, such as fashion, lifestyle, pop culture, and feature articles that require staying up to date with trends and evolutions. She suggested that AI tools like ChatGPT might not be well-suited for journalism, as they might lack the nuanced understanding required for these subjects. This finding validates her concern, as ChatGPT's inability to keep up with current fashion trends, lifestyle changes, and new fashion arrivals supports the notion that it may not be well-suited for at least the magazine. Moreover, editors haven't explored the issue of data bias or provided any examples, as discussed by Deng & Lin (2023) and Chowdhury & Haque (2023). This may come from a limited understanding of how AI functions and its potential biases.

***Table 2**: Disadvantages of AI for Editors*

Tone	Job Loss	Emotions	Accountability	Authorship/ Plagiarism	Transparency	Privacy	Editorial Principals
Milan: *"Certain things may sound too monotone".*	New York: "*Taking opportunities away from humans"*	London: "*the human voice, sense of humor, a feeling that the content has been written for the consumer*"	New York: "*I'm sure blaming AI will save a lot of people, a.k.a. It will weaken society's accountability".*	Milan: "*because it acts based on other people's work. If it is anything like AI art, it plagiarizes others' work to make inauthentic content".*	New York: "transparency *will definitely be an issue".*	London: "*Anything that isn't controlled by humans can raise a lot of privacy and accountability concerns".*	New York: "*principles will be violated".*

To address these challenges, editors were asked about the strategies that should be undertaken to navigate them. The responses unanimously advocated for imposing restrictions or avoiding usage of AI altogether. Milan articulated *"If it is anything like AI art, it plagiarizes others' work to make inauthentic content. I believe it should be restricted as it goes against journalistic integrity. If it is used for more than just a spell check, it should simply be banned".* New York echoed this sentiment, stating "*There should be strong limits placed on when and how it is used. Strong as in there will be no tolerance for such rules being broken or even bent. If one person or thing gets a pass, eventually everything will, and we'll have a whole other problem on our*

hands". London offered a more radical approach, stating "*Easy, I just don't use it. If a company uses AI and requires you to do so, there's nothing to be done. But thankfully I have a choice, and I literally stay away from it. I just don't touch it*". These responses underscore a clear desire to distance themselves from potential challenges and repercussions associated with AI usage, demonstrating a preference for avoiding such technologies altogether to safeguard their professional roles.

5.1.5. The Future of AI in Editorial Roles

This final section focuses on the editors' apprehensions regarding the future of AI technology particularly within the journalism industry. First, the interview prompted editors to elaborate on their worries regarding maintaining editorial standards as AI-generated content becomes more prevalent. Their answers mostly focused on the concern that as the demand for content grows, media organizations may prioritize speed over quality due to the competitive nature and financial constraints of the attention economy, as described by Moran (2022). New York summed it up by expressing that

> "*the standards will be relaxed. Which means the quality will become poorer, and there will be little to no discernment (in regard to talent) about who can and cannot, should and should not, reach higher places in the field. Anyone can become anything—and I mean that in a negative sense—and many positions simply won't have meaning anymore. We already see it today, and I imagine it will only get worse*".

The latter view suggests that the increased use of AI in journalism practices will lead to a decline in journalism standards, as well as a reduction in the overall value chain, as expressed by De Sibandze (2019). This could result in lower barriers to entry and a devaluation of the hard work contributed by human journalists.

Then, the interview delved into the editors' perspectives on the potential future role of ChatGPT in the industry. Will it become more integrated into the journalism industry and editorial processes? The responses were unanimously positive. They all believed that, like any technology, ChatGPT would continue to improve and find its way into daily lives and jobs. London captured this sentiment by saying *"It will be, like all new tech, get more and more popular. Personally, I think a human editing eye will always win, but I also am realistic and know just how much money it can save*". The next question highlighted whether they believed media outlets should embrace AI tools, particularly whether magazines and the journalism industry should adopt AI tools like ChatGPT more extensively. Their answers leaned towards the negative. Milan expressed, "*No, because it is a form of plagiarism, and over time it affects*

people's performances." London was open to AI being used in other industries but not in journalism, which requires a "human touch"[7]. New York believed that if AI is used, "*There should be strong limits placed on when and how it is used. Strong as in there will be no tolerance for such rules being broken or even bent*." These responses indicate a strong inclination among editors to stay away from AI tools to preserve the essence of journalism. They emphasize maintaining the integrity and authenticity of their work, valuing human creativity and critical thinking over the efficiency and capabilities of AI. This perspective reflects a cautious approach to integrating AI in the field of journalism.

Consequently, the crucial question of this research was raised on whether the editors believed they would be replaced by AI technologies such as ChatGPT, given their expectation of increased prevalence in the industry. Their responses were unanimous: they all believed they would be replaced by machines. For instance, Milan expressed

> "*Yes. AI comes with the risk of taking jobs away from editors as people won't see the need to hire them if AI can do it well. People will not want to hire an editor and pay them an annual salary, while they can spend a lot less money and buy an AI tool to do the job faster and just as efficiently".*

Their unanimous agreement reflects the concerns highlighted in research literature, such as that by Noian-Sanchez (2022), Latzer et al. (2016), and Thurman et al. (2017), which emphasize the economic advantages of computer-generated news like ChatGPT. These advantages include low costs, speed, correctness, accuracy, and the ability to cover a wide range of events, all of which pose competitive advantages for publishers and media businesses. This economic reality underscores their awareness of being at risk of job displacement, particularly during media industry crises.

It was also explored whether they saw any areas or skills that could render them indispensable in the industry. Unfortunately, their responses were not optimistic. New York expressed, "*Personally, I can't think of any"*. Milan emphasized that speed and consistency would be essential to remain competitive but conceded that competing with a machine might prove challenging. He even admitted, "*Being able to do the job well enough and fast enough in comparison to a computer program to avoid being fired is a concern".* Similarly, London stated: "*Bit by bit, AI will become more human sounding, and eventually most will probably not be able to tell the difference*". Thus, the disadvantages they highlighted earlier—such as

[7] London: "*I think that those in the fields of tech, bio, law, etc., sure. Those that require a human touch should do their best to only employ AI when there is no other choice*".

tone, emotions, or the positive aspects they possess over AI like expertise knowledge, awareness of trends and audience connection—do not seem to be factors they believe will make them indispensable. Their outlook remains pessimistic regarding future prospects, with a belief that AI will likely attain these qualities over time. This sentiment was supported by the studies conducted by Zhou et al. (2023), which demonstrate ChatGPT's ability to correct itself based on feedback. Additionally, Sarode & Bhamare (2023) expressed that AI learns and improves over time, minimizing the need for manual updates. These findings suggest a promising trajectory for ChatGPT as an editing tool, indicating its potential to become even more effective and efficient in the future. Consequently, in terms of specific skills they must develop to stay relevant, there appears to be uncertainty.

To contrast this perspective with other roles in the industry, the conversation shifted to whether writers could also be replaced by AI, prompting an exploration of whether editors were more vulnerable to being replaced. Their responses varied widely. Some were pessimistic across the board, stating that both roles were at risk regardless. Others suggested that editors would be the first to go, while writers might have a bit more resilience due to their creativity. New York expressed the later "*I don't think AI can replace creativity. Only mimic it. So while editors may be out of luck, I do think creative roles like writers are more likely to be safe*". However, London took a more pessimistic stance, asserting "*Everyone who puts a paper together, is at risk, period. AI will take over so many aspects of our lives. I hope that we will still be able to maintain humanity in publications, but honestly, I'm quite pessimistic*".

5.2. Writers' Perspectives on AI

For writers, the sections of the interviews remained consistent, although the questions varied slightly, particularly regarding their role in the magazine compared to editors, and whether they believed ChatGPT could perform editing or writing tasks more effectively. The focus shifted to whether writers rely more on ChatGPT, if they perceive ChatGPT to be more efficient at editing than writing, and whether their role as writers is more secure than that of editors.

Regarding the writers interviewed, there was Tokyo, a 38-year-old woman from the Philippines with a corporate background; Los Angeles, a 19-year-old student of Asian descent; Rome, a 20-year-old Italian American student; and Barcelona, a 35-year-old American.

Therefore, to revisit the question of age raised earlier in the editor's results section, the writer's section offered more insights. Here, the ages were 35, 19, 19, and 38, and all of them, regardless of age, have used and seemed to have been pretty familiar with AI. Therefore, there seems to

be once again here no age-related difference in AI usage, with both younger and older writers using it equally. It seems that the differing perspectives on AI usage in journalism simply come down to preferences, possibly influenced by fear or curiosity.

5.2.1. Writer's Roles

When discussing the roles of writers at the magazine XOXO, it became evident that compared to editors, there was a disparity in tasks and workload. According to writers, they are tasked with numerous responsibilities, including generating ideas, conducting research, formulating interview questions, conducting interviews, transcribing, attending events like fashion shows, contacting companies for product reviews, sourcing images for articles, ensuring the inclusion of tags and links, and creating content for social media, among other duties[8] . Indeed, Los Angeles adds "*it's my job to make sure that the articles I draft have the right tags, good quality images, links, and the use of affiliates if applicable and of course good writing*". These tasks typically fall under the purview of a content manager or editor rather than a writer as expressed by Tran et al. (2023). However, in this scenario or magazine, a writer's job is essentially to complete the overall article independently, without assistance from an art team for example. Traditionally, a content writer is expected to handle the content itself as seen in the research by Pavlik (2023) and Tuazon et al. (2020), while editors or content managers manage tasks like ensuring articles have the correct tags, sourcing images, including links, and managing formatting and presentation expressed by Jing (2007). Therefore, it seems like writers bear a significant weight from the start.

Furthermore, they discussed the essence of effective writing, highlighting two main aspects: passion[9] and clarity. Los Angeles emphasized this, stating, "*Effective writing requires that the reader is able to understand whatever the writer is trying to say without difficulty. There's no point in reading an article that makes no sense, therefore it's ineffective*". The latter parallels or refers to the editor's role to ensure that a text is coherent and resonates with the audience. These responses not only echo the sentiments expressed by editors both in terms of passion and accuracy in their interviews but also underscore the importance of readability and

[8] Los Angeles: "*If I am writing an article about an event that I attended, I will usually do preliminary research prior to attending, whether it be looking up the brand/designer, reading the press release, etc. When I'm at the event, I usually make sure to take lots of pictures/videos and interview the designer, sales rep, etc. if I can. I then send the pictures and videos to my boss with a caption for social media. After the event, if I've done interviews, I use an AI app to transcribe and then draft up an article. Images usually take some time to come in from the publicist, so I often finish the writing and submit the article for edits before inputting the images later".*
[9]Rome:"*Overall, being passionate about what I am writing about is when I write at my best".*

comprehension. They highlight the fact that writers can also play a significant role in ensuring that the content is engaging and accessible. This suggests that both editors and writers may perceive themselves as sharing similar tasks and responsibilities in crafting high-quality content.

Finally, before delving into discussions about ChatGPT and other AI tools, writers were asked about the importance of their roles at the magazine. Later, they were asked the same question about the role of editors at XOXO Fashion Magazine. For the writers, their job was deemed "fundamental" and "vital" to the magazine. Rome stated: "*I would say my job is fundamental to the success of the magazine because I have my own ideas and writing style, just as the other writers do. Each writer has a unique mind of their own, therefore making the content of the magazine distinctive and original*". Similarly, Los Angeles emphasized: "*My job as a writer is vital to the magazine, because I write the content that is being put out. Without any articles, there is no magazine. Writers are the ones who produce the product of the magazine*". Thus, the role of a writer appears to be the heart of a magazine. However, when asked whether they felt the same way about editors, there was a surprising divide. Half of the authors agreed that they were as important, while the other half disagreed. While Rome and Los Angeles believed editors were equally indispensable, stating that they contribute significantly to the magazine's quality by ensuring correctness and effectiveness in content, Barcelona expressed a differing view. She stated *"If you are referring to the people in charge of editing the grammar and photos, I personally find that the people who were assigned the role did a pretty bad job at it, and it was VERY frustrating. Though I respect the editors of the magazine very much, I do believe that the role of writers is much more important".* Therefore, Barcelona expressed two main points by referring to editors as "*people in charge of editing the grammar and photos*". She believes that most editors focus solely on these tasks, as indicated by the absence of broader responsibilities mentioned in the editor's interviews. Indeed, apart from Paris' interview, other editors mainly discussed their editing skills without mentioning contributions to articles, shows, and reviews—tasks that align more with a writer's role. Barcelona's viewpoint suggested that some editors may focus narrowly on tasks like grammar and photo editing, neglecting broader responsibilities such as contributing to articles, shows, and reviews. The second point Barcelona raised was her belief that the editing job was poorly executed, suggesting that their editing skills may be lacking. This raises the possibility that AI tools could potentially perform better. This highlights a critical issue: if editors lack the qualifications or skills to match or surpass AI capabilities, they could face replacement.

Especially in an economically and competitively driven industry, a media outlet like XOXO Magazine, aiming to establish credibility and efficiency, might find replacing inefficient editors with AI tools to be more economically viable and effective. This raises significant questions about whether editors' jobs are at risk.

5.2.2. Writers & AI: Use and Familiarity

Before delving into the writers' views on AI tools such as ChatGPT, it's important to establish their familiarity with these tools. The responses indicated a good level of familiarity, with answers ranging from "*quite familiar*" and "*fairly familiar*" to "*vaguely familiar*" and even admissions like "*It's embarrassing to say sometimes (haha) but I use ChatGPT quite a bit now*". When asked about their experiences with ChatGPT, Tokyo mentioned using it frequently for research, translation, and rewording tasks. Rome[9] and Los Angeles[10] used it for academic purposes, such as writing papers for university. On a more humoristic note, Barcelona[11] recounted using ChatGPT to simulate conversations with historical figures like Leonardo Da Vinci. Given their varied experiences and knowledge of ChatGPT, the writers were then asked what impressed them most about its capabilities. All of them agreed on its endless writing capabilities as the most impressive feature. They highlighted not only its broad grammatical knowledge and rephrasing possibilities but also its ability to write about any given topic with a simple prompt. For instance, Barcelona expressed how impressive and scary it is that ChatGPT can write a college paper. However, she added, "*However, I do not believe it will ever be able to write a fiction piece or poetry at the level a gifted creative writer can, and that is very reassuring to me*". Even though research by Singh, Kumar, and Mehra (2023) has demonstrated that ChatGPT's capabilities include crafting news headlines, poetry, essays, and articles, she believes that it could never as good as an actual writer. Therefore, so far it seems like writers have expressed their admiration for ChatGPT's capabilities without emphasizing significant disadvantages or expressing true fear about a potential threat. These answers contrast sharply with those of the editors, who consistently pointed out faults in the technology or emphasized the superior quality of the human touch after acknowledging any potential impressive quality of the technology, which were expressed as automation anxiety (Ras, 2023).

Therefore, after establishing that the writers do not seem to feel threatened by

[9] Rome: "*I have had to use it for some courses at school".*

[10] Los Angeles: "*I use ChatGPT for writing all the time in school".*

[11] Barcelona: "*As a joke I spoke to the Leonardo Da Vinci ChatGPT. It was very funny".*

ChatGPT's writing skills, the research asked if they believed the AI could outperform them in writing. The answers were unsurprising: a unanimous "*No*." Simply resting on two reasons the emotional aspect of writing [12] , and the connection a human writer will create with its readers[13].Both factors that were also discussed by editors. Moreover, Barcelona highlighted the factor of creativity, a point also raised in previous literature. Malmelin & Nivari-Lindstrom (2015) assert that creativity is fundamental to journalism, reflecting the human way of thinking, which is still lacking in AI algorithms. Barcelona, stated, "*No, because there will always be both humanistic perspective and creative faculties required to write an article. There will never be a time in which either can be completely taken over by AI*". This perspective was also supported in research by Latar (2018) and Mackova & Marik (2023). The studies stated that AI algorithms are confined to the level of creativity frameworks designed by humans, thereby limiting the true extent of human creative capability that AI can achieve. Having to rely on human creativity to function, this limitation prevents AI from surpassing human creativity.

In terms of writers' views on the use of AI, the research first asked whether they use AI tools in their writing tasks for the magazine. All of them were unanimous in their response: no. While they might use AI in their personal time or for personal tasks, when it comes to the magazine, their writing is entirely their own. Los Angeles justified this by stating,

> "*I've never used ChatGPT for any of my work in the magazine. I don't think I'd ever consider using it to write FOR me. I tend to put my journalistic work on a higher pedestal, so having an AI tool influence my perspective on my writing doesn't sit well with me*".

This response underscores how much a writer's work is a reflection of their voice, a piece of their mind, and something that truly matters to them. They believe that no other person, robot, or object could interfere with what an author is trying to convey to their audience. Moreover, something undeniable is the writers' love for their role and their enjoyment of writing independently. For instance, Rome expressed that she prefers to rely on her own mind and ideas to create content that sounds more personal. She also pursued by saying that she enjoys writing and prefers to handle all aspects, including editing, on her own. The latter reflects that even for the editing process, she prefers to do it on her own, likely because she knows best what she is

[12] Rome: "*I believe that although ChatGPT may be able to write anything, it does not have any personal or emotional aspect to it. Readers like to read magazine articles because they connect with the writing at hand, and AI tools do not have personal thoughts or experiences that a human has".*

[13] Los Angeles: "*There's something inherently human about journalism, and there's no way that a robot can replicate that. You can easily tell when something's been written by AI, because there's no emotion behind it. The kind of connection that a reader has with the writer isn't yet feasible for ChatGPT".*

trying to convey and believes that her own editing will always be the most accurate representation of her ideas (regardless of a machine or human editor).

When asked about their views on other writers or journalists, such as editors, who use AI for work, writers' responses were "*controversial*"[14] . Tokyo expressed a non-judgmental stance, suggesting that AI might help people gain confidence in their abilities and assist in developing their skills by showing them how tasks are done[15]. This perspective highlights the potential of AI as a learning tool rather than a replacement. Rome provided a more nuanced view, stating,

> "*I think writers may be either in favor or not in favor of AI Tools, just because it could help them with editing and ideas, but it would dehumanize the writing process a bit. I feel that editors would be in favor of editing tools because it would make it easier, however that would result in AI tools taking over their job altogether*".

Rome raised two key points: AI can improve writing by aiding with editing and generating ideas, and there is a perception that editors might favor these technologies, because they would simplify their work, although they could also pose a risk of replacement. However, this assumption contrasts with the general sentiment observed, where writers appeared more open to AI than editors. This discrepancy might arise from writers not feeling as immediately threatened by AI's potential to replace their roles, whereas editors perceive a more direct risk considering its capabilities. Furthermore, this discussion ties into broader literature. As Serdouk & Bessam (2023) suggest, it is inevitable that technology will continue to progress, regardless of resistance, because necessity drives intention, and the economic benefits of AI in media businesses will propel its adoption. Ultimately, it's a race against time to understand AI's capabilities and limitations to demonstrate the unique value each writer or editor brings to their role. In the end, it will all be about finding its place in an already but increasingly competitive field. Los Angeles echoed this sentiment, stating,

> "*It's no secret that AI poses a threat to the journalism/media industry in general. It has the capability to replace a lot of jobs, which is potentially dangerous to our careers. At the same time, I think that a lot of companies are now looking for ways to incorporate AI as a resource to use while not replacing people. AI is here to stay, so there's no point in running from it. I'm glad that big publications are learning to adapt to it so that it benefits everybody rather than stubbornly refusing to use its capabilities".*

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[14] Rome: "*I believe the attitudes of other professional writers or editors towards the use of AI tools like ChatGPT in the editing process to be controversial".*

[15] Tokyo: "*I don't judge them at all. It's easy, efficient, AND it sometimes helps you become a better writer and editor".*

Los Angeles' perspective reinforces that while AI presents a threat, it also offers opportunities for adaptation and improvement. Publications that incorporate AI effectively may gain a competitive advantage, prompting others to follow. This domino effect could highlight the necessity of embracing AI to remain competitive as expressed by Dalen (2012) in which necessity will drive intention (Serdouk & Bessam, 2023). Thus, it might become crucial to understand what one will be up against or working alongside, rather than remaining ignorant, in order to effectively defend their position in the increasingly competitive field of journalism.

5.2.3. Advantages of AI for Writers

When considering the advantages of integrating AI in media outlets, writers highlight many benefits, doubling the number of advantages expressed by editors earlier. Indeed, eight advantages were established in Table 3: correctness, paraphrasing, speed, creativity, editing, efficiency, cost, and ease of use. Tokyo particularly emphasized AI's crucial role in refining grammar, punctuation, and offering rephrasing options. While her view aligns with editors' perspectives on grammar and punctuation advantages, Tokyo also highlights AI's capability for rewording and paraphrasing, all of which are tasks traditionally handled by human editors. Moreover, she highlights AI's ease of use and efficiency as its primary strengths. Los Angeles echoes similar advantages found in the editors' sections while introducing a new one. She notes,*"ChatGPT can make certain aspects of the writing, editing, and publishing process much faster. Speed is an important factor in journalism, and AI can definitely help with that. It can also help by creating story ideas so that we don't waste our time trying to come up with something if we're creatively burnt out*". This not only underscores the advantage of speed, as previously mentioned by editors, but also emphasize the creative assistance AI may provide, which drastically contrasts with editors' perceptions of AI's lack of creativity, being a drawback for them. Additionally, Rome shares this positive view on AI's creative potential, stating "*I think the major advantages of incorporating ChatGPT into the writing/editing process or overall journalism would be editing articles and generating ideas for content to produce*". Thus, she echoes Tokyo's points on editing and Los Angeles' on creativity, but adds, "*I think that AI tools, like ChatGPT, can be beneficial for the editing process, but not for the entire writing process. I feel that if everything comes from the AI tool(s), then there will no longer be a need for writers or editors, everything would just come from the AI generator itself*". This statement is particularly significant to this research, showing that writers believe AI is most useful for editing tasks rather than an entire journalistic process. It also underscores the

perception that AI tools could diminish the importance of editors compared to writers in a magazine setting. Overall, writers view AI tools more favorably than editors. Barcelona asserts, *"I believe that things like AI level the playing field when it comes to writing in journalistic format*", suggesting that AI tools like ChatGPT can enrich or better journalism and leave space for new opportunities. This reflects a more optimistic perspective on AI's potential contributions to the journalism industry.

Thus, when considering whether a starting magazine like XOXO could benefit from using AI tools, the writers were unanimously in favor. Rome believes that ChatGPT would be a useful tool for digital magazines, as it can help reduce the time spent on editing and generating ideas. She says that this is particularly beneficial for new magazines like XOXO Fashion Magazine, which aims to produce a large volume of articles and needs to save time to achieve this goal. Los Angeles supports this notion, adding, "*ChatGPT can for sure help with generating possible story ideas that are quick and easy. There's only so many that one person can think of, so AI can help with things that are needed quantitatively*". Therefore, both writers reinforce the idea that AI can significantly enhance editing and idea generation, which could improve efficiency for a new magazine. However, the implication is that using AI for these tasks could potentially replace editors. Despite this, the writers believe ChatGPT possesses the necessary qualities for editing. Barcelona emphasized this point, highlighting that AI tools like ChatGPT can help editors avoid budget issues by providing affordable grammar editing solutions. She also pointed out that AI can empower smaller magazines to compete with larger corporations, preventing big companies from monopolizing the industry.

All of these advantages expressed by writers demonstrated that not only were more benefits highlighted compared to the literature, but they also covered most of the same ground. Some advantages overlapped with those noted by editors, such as correctness (language revision) and speed, but also with literature. Efficiency was explored by Deng & Li (2023), creativity by Maiden & Zachos (2022) and cost benefits were noted by Latzer et al. (2016). Additionally, the advantages of paraphrasing, editing and ease of use were new contributions from the writers. Overall, in terms of AI familiarity, writers demonstrated considerably higher familiarity than editors. This was not only expressed verbally but also shown through their interviews by touching upon more points and identifying twice the number of advantages. Once again, this higher familiarity may be attributed to writers being less fearful of the technology compared to editors.

Table 3: *Advantages of AI for Writers*

Correctness	Paraphrasing	Speed	Creativity	Editing	Efficiency	Cost	Easy Use
Tokyo: *"Perfecting grammar, punctuation*". Los Angeles: "*Having a tool that can do a grammar check instantaneously saves a lot of time and busy work for a human*".	Tokyo : "*giving options for rewording".*	Los Angeles: "*Speed is an important factor in journalism , and AI can definitely help with that*".	Los Angeles*: "I think using it to generate ideas could be useful*". *Rome: "the major advantages of incorporating ChatGPT would be editing articles and generating ideas for content to produce".*	Los Angeles : "*AI can hugely benefit the editing process*". Rome : "*I think that AI tools, like ChatGPT, can be beneficial for the editing process*".	Barcelona : "*it will help level the playing field*".	Barcelona: "*It helps editors to avoid budget issues*" .	Tokyo : "*Easy and efficient!"*

5.2.4. Disadvantages of AI for Writers

When discussing the potential faults of ChatGPT and other AI tools, writers identified a few key issues, which were quite similar to those mentioned by editors. Indeed, a total of seven disadvantages were established, as shown in Table 4: tone, bias, ethical principles, authorship, transparency, critical thinking (which goes hand in hand with creativity), and job loss. Tokyo started by highlighted the lack of critical thinking and limited creativity in AI, stating, "*it can help it by showing options, but it can also cripple it by making them complacent*". This reflects her belief that AI currently lacks sufficient creativity and critical thinking. Rome echoed this sentiment, saying, "*I think the major limitation of using ChatGPT for writing or editing is that articles would sound more automated than human. I think writers and editors could also face challenges such as loss of work*". This underscores the concern about the AI-generated text lacking a human voice and the potential job loss due to AI integration—concerns also raised by editors. Los Angeles also pointed out that "*ChatGPT hasn't quite figured out yet how to replicate that human touch so that is a limitation holding it back from fully replacing writer or editors*". Despite acknowledging the AI's inability to fully capture the "human touch" (tone), she, like other writers, didn't seem overly alarmed by this limitation or the potential job loss it could cause. Indeed, Los Angeles is not even concerned at all, she expressed that AI did not

seem to have limitations and confidently stated that AI tools like ChatGPT will never be able to fully take over the creative process[16].This view highlights a divergence among writers and editors, with editors acknowledging some limitations in AI creativity, while most writers see it as a significant advantage for them in both cases. Interestingly, while writers recognized potential job loss due to AI, they generally did not seem as alarmed by it as the editors. This could be because writers appear to have a better understanding and higher usage of AI tools than editors, leading them to see AI more as a beneficial tool rather than a threat. This difference in perspective may be influenced by the writers' more extensive experience with and understanding of AI, whereas the editors' resistance could stem from a lack of familiarity explored in Jamil's (2021) research or inherent skepticism.

Similar to the interviews with the editors, writers were asked about issues previously established in the literature regarding ChatGPT and AI tools, such as privacy concerns, issues of accountability and responsibility, questions of authorship, the problem of bias, as well as the respect and importance of transparency and journalistic principles. The writers' responses highlighted several key points. Nonetheless, all of the writers emphasized concerns about authorship and accountability. Los Angeles supported the later by highlighting significant concerns about authorship and the transparency of sources. She stated, "*Authorship can be a big issue with ChatGPT because if you claim something that it created as your own, it's technically not yours, even though a robot and not a human generated it".* She also pointed out the potential for ChatGPT to draw information from various sources without proper attribution, leading to plagiarism issues[17]. This concern was echoed by Rome, who also pointed out ethical issues related to bias, transparency, and adherence to journalistic principles. She noted that using AI tools like ChatGPT could raise privacy concerns and accountability issues regarding authorship in journalism. She mentioned that there are already instances of plagiarism in school and work, so similar issues could arise with the use of AI tools. She also pursued *"I do think the use of AI tools, like ChatGPT raise ethical concerns regarding bias, transparency, and adherence to journalistic principles. I'm not entirely sure how these concerns should be addressed, but I do think that they should be talked about more in the public*". Therefore, the

[16] Los Angeles: "*None, except what I already said, that it will never be able to take over the creative writing process. However, I don't see this as a bad thing*".

[17] ACW*: "Also, ChatGPT draws its information from a variety of sources all across the Internet, so it could possibly be plagiarizing from sources or using info from it without giving due credit*".

consensus among writers was that the best way to address these concerns is through clear disclosure of AI use. Tokyo suggested that in reportorial journalism, writers still need to interview, write, and edit, and if ChatGPT is used, its use should be disclosed. She stated, "*The question REALLY, is whether or not a writer will credit ChatGPT. If it was used for research, perhaps there is no need for disclosure. If it was used for writing and editing, as long as the writer actually reads the final pass, and is honest about it, then it should also be alright*". This sentiment was echoed by Barcelona, who emphasized the importance of transparency in creative writing, expressing,

> "*I believe people should be required to say when they did use AI, and whether they used it just for grammatical issues or whether it wrote the piece (though how they can quantify this is yet to be determined) - however, I think that people should be able to use AI, if it helps them overcome writing barriers that they otherwise wouldn't be able to overcome*".

The latter is therefore encouraging considering that if it all comes down to a matter of disclosing its use, it may be an "easy" fix. Nonetheless, Los Angeles was the only journalist at the magazine, among both editors and writers, to specifically address AI bias, demonstrating a deeper understanding of the issue and of AI in general. She noted, "*Humans are inherently biased. And because humans created ChatGPT, that tool is also biased. I've seen some videos where ChatGPT's viewpoints are particularly skewed in terms of the US Election and other political campaigns*". This highlights how knowledgeable she is about AI biases. The latter was established in the literature by Deng & Li (2023), Mattas (2023), as well as Singh, Kumar, & Mehra (2023), stating that biases are inherent to all humans and extend to the machines they create. But again, as a remedy of repercussions, she emphasized the need for transparency and the importance of distinguishing between a writer's own work and AI-generated content[18]. Her further suggestion was to educate writers and editors about the fine line between human and AI work a point also emphasized by Barcelona, who advocated for establishing guidelines for AI use. Therefore, when asked how these challenges should be navigated clear consensus emerged: they all advocate for openly discussing the use of AI and giving it proper credit. More importantly, Los Angeles emphasized

[18] Los Angeles: "*I think if somebody were to pass off ChatGPT's work as their own, that also raises the concern of transparency and lack of credit to the tool as a resource. Journalistic ethics code requires your work to be entirely your own, and that's not happening if you rely too much on AI. The easiest way to avoid this personally is to just not use ChatGPT, but in this day and age, there should be a way to educate writers and editors about the fine line between what's yours and what's AI's*".

> "*In this day and age, there should be resources that teach people, not just journalists, on the proper use of AI. Improper use can result in a variety of issues. Journalists should be aware of the code of ethics they should adhere to, but there should be improvements made to this code to create a standard on AI use*".

This suggests that establishing rules and, most importantly, providing education on the proper use of AI are crucial steps forward. This approach goes beyond the editors' responses, highlighting a proactive stance among writers towards integrating AI responsibly into their work. These answers support the previous hypothesis that for writers, knowledge is power. They actively seek familiarity with AI, a notion that contrasts drastically with the views of editors who simply wanted to avoid AI altogether. Additionally, this contrast shows that editors generally viewed AI with more fear, skepticism and concern about maintaining the human touch in writing and editing, while writers seemed more open to the potential benefits of AI by findings solutions. This openness to AI's capabilities, combined with a call for transparency and ethical usage, reflects a balanced perspective on integrating AI tools like ChatGPT into journalistic practices.

Table 4: *Disadvantages of AI for Writers*

Tone	*Bias*	*Ethical Principles*	*Authorship*	*Transparency*	*Critical Thinking/Creativity*	*Job Loss*
Rome: "articles would sound more automated than human".	*Los Angeles: "Humans are inherently biased. And because humans created ChatGPT, that tool is also biased.".*	*Rome: "the use of AI tools, like ChatGPT raise ethical concerns regarding bias, transparency, and adherence to journalistic principles."* *Los Angeles: "Journalistic ethics code requires your work to be entirely your own, and that's not happening if you rely too much on AI".*	*Los Angeles: "Authorship can be a big issue with ChatGPT".* *Tokyo: "The question REALLY, is whether or not a writer will credit ChatGPT".*	*Barcelona: "I believe people should be required to say when they did use AI".*	*Tokyo: "no critical thinking (at the moment) and limited creativity".*	*Rome: "face challenges such as loss of work".*

5.2.5. The Future of AI for Writers

This final section addresses writer's concerns about the future of AI technology in the journalism industry. Writers were asked to elaborate on their worries regarding maintaining editorial standards as AI-generated content becomes more prevalent. Unlike editors, writers were generally more optimistic. Tokyo expressed no concerns, stating, "AI can help maintain editorial standards. You simply have to teach it what those standards are." This demonstrates her confidence in AI's ability to be programmed to uphold specific standards, aligning with research by Miroschnichenko (2018), which states that AI already has an advantage over human editors due to algorithms based on human reactions. The research by Deng & Li (2023) also supported the latter, noting that AI can be trained and adapt to new queries and contexts, producing more accurate results by learning from mistakes. Moreover, Barcelona shared a similar view, expressing she had few concerns because she does not believe AI will ever fully replace human journalists. This suggests that ethical standards will be maintained as long as humans are there to supervise and enforce them. Los Angeles and Rome did not express concerns about editorial standards but rather the potential loss of jobs[19]. This shows that writers may believe that AI can meet editorial standards, given that their primary worry is job displacement. Los Angeles remarked: "Because of ChatGPT's advanced capabilities, there's no telling when a company all of a sudden decides it doesn't need its writers anymore." This acknowledgment of the risk of job loss underscores their recognition of AI's capabilities and the potential for these to evolve over time. Therefore, writers recognize that as AI advances, the risk of being replaced increases.

In the last part of the interview, the focus shifted to the writers' perspectives on the potential future role of ChatGPT in the industry. Will it become more integrated into journalism and editorial processes? The responses were unanimously positive, similar to those of the editors. Tokyo believes that ChatGPT will be used to progress and improve writing: "*I think it will be common for many places to ask ChatGPT for a version, and then compare that version to the original and create a best version from there*". Additionally, Barcelona highlights that with time, there will probably be laws and rules to regulate its use, making it easier and more beneficial. Therefore, it seems like both editors and writers acknowledge the benefits of AI and foresee its increased incorporation into the industry. However, their stances on supporting its

[19] LLW: *"Although there are concerns about authenticity regarding AI-generated content as it becomes more prevalent in the industry, I think the main concern is the loss of jobs within the industry".*

integration differ significantly. When asked if AI tools should be embraced, writers were unanimous in their positive responses. Barcelona noted that AI should be embraced because *"it opens the doors to let in journalists whose native language is not English, or who otherwise had a less than stellar journalism education*". This point echoes the editor New York' sentiment and De Sibandze (2019)'s research, that AI could relax the standards of journalism but in this case in a positive way, allowing entry for people with diverse educational and cultural backgrounds, provided solely on solid creative or writing skills. Moreover, Los Angeles raised an important point,

> "*I think it would be naive to think that ChatGPT won't have an impact on the journalism industry. Already, it's making waves in all kinds of industries, and journalism is no exception. Embracing what is happening would be better than running away from it all together, because it will always catch up to you."*

This underscores the idea that getting ahead of the curve is crucial. Knowledge is power, and acquiring AI skills will increasingly become a valuable asset for media outlets.

The next question in the research focused on whether the writers believed they would be replaced by AI technologies such as ChatGPT, given their expectation of increased prevalence in the industry. Most of them believed it to be a no, which stands a sharp contrast to the editors' views, which were unanimously yes. Rome was the only writer who believed AI could replace journalists: "*I do foresee a scenario where AI tools like ChatGPT could replace the role of journalists in the future. If these tools can already do what writers do (in an automated way), then they can replace the role altogether*". Therefore, she believes that once AI surpasses human capabilities, there will be no hope for human writers. Nevertheless, other writers like Los Angeles disagreed, saying, *"Ultimately, a robot can't compute human emotions, so while the stability of a journalist's job might be unsure, for now I don't see it happening. There's no way a robot can create a connection in a way that a human can"*. Moreover, Tokyo raised the importance of the interview, a significant part of a writer's role that involves a social aspect. Journalists need to visit places, explore, stay vigilant, and talk to people to get the first good stories[20]. This cannot be replicated by a machine, regardless of the amount of data it has access to. Similarly, when asked about the areas or skills that could render them indispensable in the industry, most writers emphasized the human touch or connection that only a true human writer can achieve with its audience. Indeed, this draws back to the concept of "Feeling Economy", expressed by Huang et al. (2019). In their research they

[20] *RDW: "No. Because it still can't interview people directly, or visit places to see situations".*

emphasized that as AI excels in analytical and thinking tasks, human works will be expected to focus more on interpersonal and empathetic tasks. The writers at XOXO Fashion Magazine understood the later by finding ways to connect with readers, helping them relate to the content, and ensuring they leave satisfied with the knowledge or reassurance they sought. Los Angeles articulated this point well*: "The ability to connect with humans emotionally through writing is something that ChatGPT doesn't have yet, so it's what's currently making us stand out from them. That skill should thus be practiced and be fully developed if we want to make sure that we're not replaced by AI".* This insight suggests that writers already have a clear understanding of the unique qualities they bring to their work and how to market themselves in a progressive automation society, which contrasts with the editors' perspectives. Editors emphasized skills that were weak or incompatible with a machine such as speed. Instead, writers highlighted the irreplaceable emotional connection and personal touch they offer.

Finally, to contrast this perspective with other roles in the industry, the conversation shifted to whether editors could also be replaced by AI and whether editors were more vulnerable to being replaced. Most of their answers, except for one, suggested that it didn't matter much. Editors are not inherently more at risk. Rome supported this notion, suggesting that editors face the same risks as writers because if an editor can be replaced, so can a writer. Tokyo explained that editors still need to review the initial content, decide which parts to keep or discard, and determine what needs rewording. She believes that while the role of editors might change, they remain integral to the thinking and editing process, and therefore won't be easily replaced. Barcelona added that editors and writers will never be fully replaced, as both computer graphics and written content require a human touch that computers cannot completely replicate. This underscores the belief among journalists that the human eye remains essential in the editing process. Nonetheless, Los Angeles stated *"I definitely think that AI poses a greater risk for editors, because it has the capability to do a lot of their responsibilities with more accuracy, such as grammar and spell check".* Los Angeles emphasizes that in the context of the magazine, editor's responsibilities align more with the capabilities of AI. This research has shown that indeed, ChatGPT qualifies for most of these tasks, and in the magazine, according to both writers and editors' answers, in general, editors do not seem to have a higher role than classic editing tasks. Considering previous answers from editors, it also emphasizes that even though a human eye may seem more ethical, it might not always be the most accurate and efficient, especially if AI can be "trained." Therefore, this research leaves a lot to think about.

Conclusion

To assess the impact of AI tools like ChatGPT on editors' roles at XOXO Fashion Magazine, this research conducted interviews to provide editors with a platform to express their concerns and defend their positions, while also highlighting their uncertainty about navigating the evolving landscape of automation. The primary goal was to explore editors' perceptions of AI tools, their views on the benefits and challenges of using ChatGPT, and their understanding of its implications for their profession. The findings revealed that while editors displayed a moderate level of familiarity with AI, they lacked a comprehensive understanding of its capabilities. Their responses regarding skills needed to compete with AI were weak, or nonexistent, suggesting they were unsure of what they were up against. Moreover, they remained pessimistic about job security and the capabilities of AI, consistently emphasizing the importance of human touch. Whenever questioned about the benefits of AI, editors felt compelled to balance their responses by mentioning potential disadvantages, even if not directly asked, highlighting their cautious approach. This behavior reflected a sense of obligation to defend their roles within the magazine, which came from an underlying fear and anxiety about the potential impact of AI on their jobs. Indeed, when asked whether media outlets should embrace AI, they leaned towards a clear negative response. Considering that they do not seem to be extremely familiar with or use AI at all, their reluctance to embrace it could be based on two hypotheses. First, it would seem that their preference would be to not undergo further training in AI, thereby slowing down the process of AI integration in the editing process. Second, as expressed by the research from Jamil (2021), their lack of education about AI could pose an obstacle to its integration and result in resistance to its use. This resistance could lead to automation anxiety, as explored by Ras (2023), which is a fear related to automation in journalism and could ultimately have a job-killing effect, as expressed by Akst (2023). Supported by Eiber et al. (2020), this fear of job automation would therefore influence their acceptance of ChatGPT both in their work and personal lives.

The primary disadvantage frequently mentioned by editors was AI's lack of emotional intelligence, as highlighted by Sarode&Bhamare (2023). This absence of emotional understanding was a key point reiterated by editors to counter AI's advantages. Additionally, they discussed how humans demonstrate a better understanding of subject matter expertise, human emotions and ethics areas where the competition lies, echoing findings similar to Ozcelik (2023) research. Despite acknowledging these disadvantages and its significantly fewer advantages, they still expressed fear and a sense of vulnerability to being replaced,

especially when asked how to navigate these challenges. Their answers leaned towards avoiding AI altogether. This contrasts with the notion presented by Komatsu et al. (2020), suggesting that the lack of ethics editors expressed, might prevent AI from significantly threatening journalists' roles. Hence, there appears to be a prevailing fear overshadowing these potential competitive skills, arising from the editors' awareness of AI's evolving capabilities or their lack of comprehensive understanding about AI. Therefore, in light of Kim & Kim's (2018) research, editors in this scenario seem to fit the profile of type two journalists, consistently downplaying AI's potential and simply viewing it as a threat.

On the other hand, writers raised significantly more points found in previous literature regarding AI's advantages, disadvantages, and general familiarity. Conversely, very few editors reported using AI and expressed a desire to stay away from it. While aware of AI's capabilities, editors focused on its negative aspects, such as transparency, ethical issues, and bias, rather than exploring its positive impacts. On the contrary, writers seemed more open to this new technology and delved deeper into its positive impacts. When asked whether they believed media outlets should embrace AI, writers were unanimously in favor, unlike editors. Moreover, the number of advantages raised by writers was double of that provided by editors. Writers highlighted more advantages than disadvantages, emphasizing the positive aspects of AI without constant caution. When discussing challenges posed by AI, writers suggested solutions like improving transparency and teaching ethical AI usage, viewing AI as a tool rather than a threat. This contrast shows that writers are more open to embracing the technology than editors.

The later suggest that writers feel less threatened by AI than editors. When asked if AI could replace them, the majority said no. This could be because their familiarity with AI reduces their concerns. As observed by both Jamil (2021) and Ras (2023) a lack of knowledge about AI presents a significant obstacle to its effective integration, leading to automation anxiety. This anxiety was evident in the editors' responses, as all of them unanimously answered that they would be replaced by AI. In this case, familiarity with technology appears to lead to less fear and greater acceptance of its capabilities. This trend is seen among writers, who seemed more open to AI tools into their work, and simply hoped for a better transparency about their use. They recognized AI's benefits for tasks like editing or creating and did not express as much fear about AI replacing human creativity and human emotions/connections. While both editors and writers, stressed the irreplaceable value of human intuition, creativity, and emotional connection in writing and editing established in the notion of “Feeling Economy” (Huang et al., 2019). Editors seemed more protective of traditional human roles in journalism, while

writers were more adaptable and saw AI as a supplementary tool rather than a direct threat. Both groups agreed on the importance of transparency and ethical considerations, but their comfort levels with AI integration varied significantly, with writers more inclined toward integration despite any fears or challenges. Considering Kim & Kim's (2018) research, writers could therefore be identified as type 1 journalists. They've established that even though AI offers benefits, they lack important skills to be considered threats to their current jobs. They've acknowledged that AI tools like ChatGPT are good at processing tasks such as editing, but their role is confined to specific tasks, and they therefore don't see AI as a threat at least, for now.

Therefore, the last point to be risen must be concerned with "why consider whether editors could be impacted by ChatGPT and not writers?" Based on the fact that writers have established to play a more significant role in the magazine, editors appeared at higher risk of being replaced by the technology. Editing tasks established by the editors primarily involve correction and adherence to style and frameworks—tasks that ChatGPT can perform. Indeed, it has even been demonstrated that writers believe AI to be most beneficial to editing purposes, reducing the workload of editors. Therefore, while writers believe that human editors are better than machines and equally important to the magazine, they agree that editing tasks, being more routine, could potentially be taken over by AI. The latter is crucial to determine whether, if all writers were to use ChatGPT as an editor, traditional editors at the magazine would remain relevant or become redundant. This analysis underscores the true impact of the editor's role in the context of ChatGPT. Even though it seems that, so far, ChatGPT is not used within the magazine and editors' jobs remain safe it has been established that ChatGPT could still potentially replace them. Despite the perceived importance of editors in a magazine, ChatGPT can replicate their capabilities and perform editing tasks, which are the primary responsibilities of the editors at XOXO Fashion Magazine. Therefore, the question of impact is now merely a matter of time.

Nonetheless, the study has several limitations that need to be acknowledged. First, conducting email interviews, even if anonymous, may have hindered interviewees from being completely honest about their use of AI tools like ChatGPT at the magazine, potentially leading to withheld information. Therefore, conducting interviews in person or via video call could have encouraged more openness, details, and spontaneity in responses, ensuring a more comprehensive understanding of the topic. Second, ChatGPT is an AI tool in constant evolution, and this research, conducted in 2024, reflects current perspectives and practices surrounding AI technology. However, the evolving nature of AI and the roles of journalists

could result in changes between the publication of this research and its future applications. Indeed, the dynamic nature of AI means that developments and advancements may occur beyond the scope of this study. Hence, the study's conclusions should be interpreted with this consideration in mind. While the findings provide valuable insights into prevailing attitudes and behaviors towards AI in journalism at the time of the research, future studies may be needed to capture evolving trends and implications as AI technology continues to evolve.

Furthermore, the study's scope was constrained by the limited number of journalists and the magazine's size. To extend the exploration, future research could be conducted on a larger scale, such as in a prominent corporate magazine, involving more journalists interviewed, from both writing and editorial departments. This would offer deeper insights into the roles of editors in larger and more established publications. Additionally, a comparative study could be undertaken between magazines utilizing AI tools like ChatGPT and those that do not. This comparative analysis could help determine if the views of journalists and editors regarding AI are influenced by its integration and whether it leads to automation anxiety in certain contexts. Finally, focusing on magazines that have integrated AI tools like ChatGPT could help ascertain whether editors' roles have been directly impacted by their use. It would be valuable to investigate whether there has been any noticeable loss of jobs among editors or, conversely, whether there has been an increase in efficiency within their job and media outlets as a result of AI integration.

Annex A: Editor Interview Script

Introduction:

Before we delve into the discussion about AI and its implications for editing, could you provide some background information? Specifically, I would like to know your age, nationality, gender, and profession, and how long you have been practicing as such.

Role in the Magazine:

1.What is your role in the magazine, and what are your primary responsibilities?

2.Could you describe your typical process for editing content in the magazine?

3. From your perspective, what constitutes effective editing?

4.Would you say your job is fundamental to (the success of) the magazine?

Familiarity with AI:

5.How familiar are you with AI technology, such as ChatGPT, and what do you understand about its capabilities?

6.Have you personally used ChatGPT or similar AI tools in your personal time?

7. What do you consider to be the most impressive features of ChatGPT, particularly in terms of writing, editing, and overall functionality?

Utilization of AI Tools:

8. Do you have ever used ChatGPT or any other AI tools to assist you in your editing tasks? And do you currently use for your editing tasks in the magazine?

9.What do you perceive to be the attitudes of other professional editors towards the use of AI tools like ChatGPT in the editing process? (do you judge them; do you believe it to be beneficial?)

Potential Benefits of AI:

10.Do you believe that AI tools, like ChatGPT, can be beneficial for the editing process? Why, why not ?

Capacity of AI tools:

11.Do you believe that ChatGPT or other AI tools can outperform human editors? Why or why not?

12.What are the major advantages of incorporating ChatGPT into the writing/ editing process or global journalism?

13.Do you consider ChatGPT to be a useful tool for digital magazines, especially those that are just starting and aiming to produce a large volume of articles like XOXO Fashion Magazine? Why?

Limitations and Challenges:

14. What do you see as the major limitations or challenges of using ChatGPT for editing?

15. Do you believe that using AI tools like ChatGPT could raise privacy concerns or issues of accountability, particularly regarding authorship in Journalism?

16. How do you think the integration of AI tools like ChatGPT might impact the writer's creativity in the editing process?

17.Do you think the use of AI tools, like ChatGPT raises ethical concerns regarding bias, transparency, and adherence to journalistic principles? If so, how do you think these concerns should be addressed? (do you believe to play a role in fighting these concerns?)

18. As an editor, how do you think ethical challenges associated with AI-generated content should be navigated?

19.What concerns, if any, do you have about maintained editorial standards as AI-generated content becomes more prevalent in the industry?

Future:

20.In your opinion, what is the potential future role of ChatGPT for editors? (Will it be used more and integrated into Journalism practices?)

21. Do you believe that AI tools like ChatGPT could eventually replace the jobs of human editors?

22. Are there specific skills or areas of expertise that you think will become increasingly important for editors as AI technology continues to advance?

23. Should magazines and the journalism industry as a whole embrace AI tools like ChatGPT more extensively? Why or why not?

24. Do you foresee a scenario where AI tools like ChatGPT could replace the role of journalists (like writers) in the future?

25. What about editors? Do you believe them to be at greater risk? Why, why not ?

Annex B: Writer Interview Script

Introduction:

Before we delve into the discussion about AI and its implications for editing, could you provide some background information? (for demographic purposes) Specifically, I would like to know your age, nationality, gender, and profession, and how long you have been practicing as such.

Role in the Magazine:

1.What is your role in the magazine, and what are your primary responsibilities?

2.Could you describe your typical process for writing content in the magazine?

3.What does your main schedule typically look like in your role as a writer?

4. From your perspective, what constitutes effective writing?

5.Would you say your job is fundamental to (the success of) the magazine? Why?

6.What about editors?

Familiarity with AI:

7.How familiar are you with AI technology, such as ChatGPT, and what do you understand about its capabilities?

8.Have you personally used ChatGPT or similar AI tools in your personal time?

9.What do you consider to be the most impressive features of ChatGPT, particularly in terms of writing, editing, and overall functionality?

Utilization of AI Tools:

10.Do you have ever used ChatGPT or any other AI tools to assist you in your writing tasks? And do you currently use for your writing tasks in the magazine?

11.What do you perceive to be the attitudes of other professional writers or editors towards the use of AI tools like ChatGPT in the editing process? (do you judge them; do you believe it to be beneficial?)

Potential Benefits of AI:

12.Do you believe that AI tools, like ChatGPT, can be beneficial for the writing and or editing process? Why, why not?

Capacity of AI tools:

13.Do you believe that tools like Chat GPT could perform as well as a human writer in a magazine? Why or why not ?

14.Do you believe that tools like Chat GPT edits as well or better than as human editor in a magazine? Why or why not? And do you believe the role of editor to be as important as yours in the magazine ?

15.Do you consider ChatGPT to be a useful tool for digital magazines, especially those that are just starting and aiming to produce a large volume of articles like XOXO Fashion Magazine? Why?

Limitations and Challenges:

16. What do you see as the major limitations or challenges of using ChatGPT for writing or editing?

17.Do you believe that using AI tools like ChatGPT could raise privacy concerns or issues of accountability, particularly regarding authorship in Journalism?

18. Do you think the use of AI tools, like ChatGPT raises ethical concerns regarding bias, transparency, and adherence to journalistic principles? If so, how do you think these concerns should be addressed? (do you believe to play a role in fighting these concerns?)

19. As a writer, how do you think ethical challenges associated with AI-generated content should be navigated?

20. What concerns, if any, do you have about maintained editorial standards as AI-generated content becomes more prevalent in the industry?

Future:

21. In your opinion, what is the potential future role of ChatGPT for writers? (Will it be used more and integrated into Journalism practices?)

22. Are there specific skills or areas of expertise that you think will become increasingly important for content creators (writers) as AI technology continues to advance?

23. Should magazines and the journalism industry as a whole embrace AI tools like ChatGPT more extensively? Why or why not?

24. Do you foresee a scenario where AI tools like ChatGPT could replace the role of journalists (like writers) in the future?

25. What about editors? Do you believe them to be at greater risk? Why, why not ?

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