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CITAR

Centro de
Investigação em
Ciência e Tecnologia
das Artes
Universidade Católica
Portuguesa | Porto
Rua de Diogo Botelho,
1327
4169-005 Porto,
Portugal
artes.ucp.pt/citar

Porto International Conference on
Musical Gesture as Creative Interface

Porto, Portugal, March 17–19, 2016

PROGRAM

and

ABSTRACTS

2016 Porto International Conference on *Musical Gesture as Creative Interface*

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Slavisa Lamounier | CITAR–Universidade Católica Portuguesa, PT
slavisa.lamounier@gmail.com

Paulo Ferreira-Lopes | CITAR–Universidade Católica Portuguesa, PT
pflopes@porto.ucp.pt

*Study and Development of Digital Musical Instruments with an Emphasis
on Gestural Interface, Motion Analysis and Interactivity*

ABSTRACT

Our research project is focused on DMI Design (digital music instruments) and this paper describes the some preliminary research processes – gesture interpretation and gesture translations methods - for the implementation of our

prototype Digital Sock: a digital music instrument where sound is controlled through feet movements. This preliminary research aims to investigate body movements with no sound synchronization and consequently without a sound/body movements significance and also observe how casual body movements driving the body itself to a transitory space of relationships.

The gesture interpretation and translations methods process was divided on two major research parts: (1) The gesture capture, and (2) The gesture analysis. The first part our research was realized with help of a Motion Capture System (vicom T40S-NR18 - 4 Mega pixel cameras) on the Motion Capture Lab at the School of Arts (Portuguese Catholic University) and CITAR among 2015.

On a secondary instance we carried the extracted data from MoCap system to Autodesk Maya 3D animation software and Kinovea 8:20. The kinematics data analysis carried us to observe and reflect about gesture significance and his interaction with the space. The analysis of biomechanical aspects also helped us to establish a comparative observation of participants actions and the relationship between body and space, as well the analysis of interactional cycle that guides gesture in their different growth levels.

The results of this part of our research, contributed, to understand the geometry of the movement during the realization of expressive gesture in everyday gesture in order to explore the fine motoric skills of the feet, the body-space relationship among interactive processes, as well as aspects intentional underlying of gesture development without sound/musical meaning.

KEYWORDS: gesture analysis; expressive and musical gesture; motion capture; digital musical instrument (DMI); interactivity

Slavisa Lamounier is a dancer, choreographer, journalist and specialist in media education. As a researcher whose main field is the analysis of expressive and musical gestures during interaction processes, they, artistic performances, pedagogical practices and / or motor rehabilitation therapies. Currently is part of the PhD Program in Science and Technology of Arts, the School of Arts (Portuguese Catholic University) and CITAR, having been awarded a scholarship by the Foundation for Science and Technology – FCT with the project DIGITAL SOCK: study and development of digital musical instruments with an emphasis on Gestural Interface, Motion Analysis and Interactivity.

Between 1988 and 1991, **Paulo Ferreira Lopes** studied in Lisbon composition with Constança Capdeville. In 1994 Paulo Ferreira-Lopes moved to Paris. Between 1995 and 1997 studied in Paris composition with Emmanuel Nunes, Antoine Bonnet and Computer Music with Curtis Roads. In 2004 he received the Doctor degree from the University of Paris VIII. Since June 2004, Director from the Research Centre for Science and Technology in Art CITAR and Professor at Portuguese Catholic University. Between 2010/2013 Music Departemenhead - Portuguese Catholic University. Since 2007 invited Professor at Karlsruhe Music University. In

2004 his work was selected by the International Society for Contemporary Music to represent Portugal in the World Music Days 2004. Paulo Ferreira-Lopes works has been produced in international festivals - Musica STRASBOURG, MUSICAVIVA, Estoril Summer Festival, documenta X - Essen, Biennal S. Paulo, ZKM-Karlsruhe, World Music Day's, Gulbenkian Fondation, Expo 98 Portugal.
