

Séminaire Maurizio Mancini and Stefano Piana

Mardi 13 décembre 2016 à 10h00

Campus Jussieu, 4 place Jussieu, Paris

Salle de réunion H20, ISIR

Automated Extraction and Sonification of Motion Qualities

Abstract: The EU H2020 ICT Projects DANCE (2015-2017) and Wholodance (2016-2018) investigate how affective and social qualities can be automatically extracted from human full-body movements during dance performance. The goal of DANCE is the translation of these qualities into sound and music. DANCE addresses research challenges such as: can expressive movement qualities be perceived only from the auditory channel allowing one to "listen to a choreography", "feel a ballet"? Can sounds unambiguously transmit the expressive qualities of the dancer's movements? The Wholodance Project has the goal of applying search tools, computational models, emotional content analysis and techniques for the automated analysis of non-verbal expressive movement to dance data, to investigate movement and learning principles, vocabularies, mental imagery and simulation connected to Dance Practises.

This seminar presents algorithms for analyzing expressive full-body movement qualities of dancers. In particular, we introduce a conceptual framework we recently proposed in DANCE and Wholodance, stemming from a research work we performed in collaboration with expert choreographers and dancers. We provide an overview of the computation of movement qualities such as: Lightness, Gravity, Fragility, Transmission, Suspension, and Salience. Then, we describe in detail a computational model (and the corresponding module we developed for the EyesWeb XMI software platform) of Fluidity. In the last part of the seminar, we illustrate a few examples of how movement qualities can be mapped onto sound qualities.

Short bio: Dr. Maurizio Mancini obtained his PhD in Computer Science in 2008 at the University of Paris 8, France. Since 2001 he carried out his research activity in the framework of several EU projects in FP5-7 and H2020. In 2008 he joined the department of Informatics, Bioengineering, Robotics and System Engineering at the

University of Genoa, Italy, as postdoc researcher. His research activity focuses on the definition and implementation of models and algorithms for automated expressive movement analysis and synthesis in the field of Human-Computer Interaction. In particular, he has been the main coordinator of the design and implementation of the Greta virtual agent, and he is currently contributing to the development of the EyesWeb XMI research platform. He co-authored more than 80 peer-reviewed publications on international journals, books and conferences.

Dr. Stefano Piana received his M.Sc. degree in computer engineering in 2012 and his doctoral degree in Electronic and Computer Engineering, Robotics and Telecommunications for his study on automatic emotion recognition from body gestures in 2016 at the University of Genoa, Italy. He is currently working as a post-doc researcher at the CasaPaganini - InfoMus Research Centre, part of the department of Informatics, Bioengineering, Robotics and System Engineering. His research work focuses on affective computing, human body movement analysis, emotion recognition. He has been and is currently involved in EU FP7 (ASC-Inclusion, SIEMPRE) and EU H2020 (DANCE, WHOLODANCE, TELMI) projects in which he works on movement qualities analysis for emotion recognition, rehabilitation, expressivity analysis, and non-verbal communication. He co-authored a several publications in peer-reviewed journals and conference proceedings.