Webinar

Robots on the stage

Fostering interdisciplinary convergences between robotics and theatre

2. Human actors, acting robots: bodies, behaviors, interactions between observation and programming

Friday 26th March 2021, from 10am to 1pm

10:00 – ***Introduction to the webinar "Robots on the stage"***

Erica Magris, Giulia Filacanapa et Salvatore Anzalone, EUR ArTeC – Université Paris 8, Saint-Denis, France

10:10 – ***Stage and Robotics: from Puppets to Social Agents***

Giulio Sandini, Robotics, Brain and Cognitive Sciences - Istituto Italiano di Tecnologia, Genova, Italy

Stemming from the objective of the ArTec project: "to investigate the relational and dramaturgical potential of the robot on stage in its interactions with the actor and viewer" I will focus the presentation on how to move from today's robots, still a theatrical object like masks and puppets, toward robots able to express, in real life as well as on stage, their internal state and understand their partner's. I will claim that in this endeavor a robotics lab and a theater's stage are not different in offering a scenario where human social and cognitive abilities can be investigated to study humane social interaction and to discuss how we see our society and our theatrical stages evolving in the direction of a co-existence of humans and artificial systems. Still a long way to go in spite of the fantastic advancements of robot technology.

10:50 – ***The "spectator's performative experience" and the robots***

Gabriele Sofia, Département d'Arts du Spectacle, Université Grenoble Alpes, France

The notion of the "spectator's performative experience" was born to underline the difference between a spectator who attends a live performance and other forms of spectatorial experiences (at the cinema, in front of the television, etc.). The concept, however, also highlights the active, "performative", role that the spectator is required to assume during a performative event. Embodiment theories enable us to focus on four characteristics, four points of interest that are useful for the reflection upon the particular cognitive traits of such an experience, which can be defined: relational, embodied, predictive and co-constituting.

These four characteristics can be summed up as follows: if the life experiences of an individual emerge from the interactions with others and with the environment, given that the other individuals that co-constitute the environment are actors (people who organize themselves differently to the way they do in everyday life), the individual spectator's experience will also be extra-daily. Such an experience is fundamentally different from both all the other daily experiences and other spectatorial experiences in which the artist does not co-constitute a space with the spectator.

But, what happen when the spectator attends a live performance with robots on the stage?

The communication will try some hypothesis about the co-constitution process of spectator and robots engaged in a theatrical relationship.

11:30 – ***Pause***

11:40 – ***Transdisciplinary scientific research in human-machine interaction inspired by the arts***

Antonio Camurri, Casa Paganini - InfoMus Lab, DIBRIS, Università di Genova, Italy

This seminar briefly introduces Casa Paganini – InfoMus, a research centre cultivating the intersection of scientific research in ICT with artistic and humanistic research in new media. The mission of Casa Paganini – InfoMus consists of carrying out scientific and technological research on human-centered computing where art and humanistic culture are a fundamental source of inspiration. In particular, this seminar presents recent results from the European H2020 FET PROACTIVE EnTimeMent project. EnTimeMent aims at a radical change in scientific research and enabling technologies for human movement qualitative analysis, entrainment and prediction, based on a novel neuro-cognitive approach of the multiple, mutually interactive time scales characterizing human behaviour. EnTimeMent explores novel perspectives on understanding, measuring and predicting the qualities of movement at individual as well as group level in motion capture, multisensory interfaces, wearables, affective and IoT technologies. Joint music actions and dance are among the scenarios adopted to contribute to a transdisciplinary approach to inspire the scientific and technological research.

More info: http://entimement.dibris.unige.it and http://www.casapaganini.org/atempo

12:20 – ***Discussions***

12:45 – ***Conclusions***

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Scène et robotique : interactions et interrelations – un projet de l'EUR ArTeC
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Biographies

Giulio Sandini

Giulio Sandini is a founding Director of the Italian Institute of Technology where in 2006 he established the department of Robotics, Brain and Cognitive Sciences. He has been full professor of bioengineering at the University of Genoa, research fellow and assistant professor at the Scuola Normale Superiore in Pisa and Visiting Research Associate at the Department of Neurology of the Harvard Medical School. In 1990 he founded the LIRA-Lab (Laboratory for Integrated Advanced Robotics, www.liralab.it) and in 1996 he was Visiting Scientist at the Artificial Intelligence Lab of MIT.

Gabriele Sofia

Gabriele Sofia is a Maître de Conférences Habilité à Diriger des Recherches in Performing Arts at the Université Grenoble Alpes (Litt&Arts, UMR 5316). Ph.D in «Tecnologie digitali per la ricerca sullo spettacolo» and «Esthétique, Sciences et Technologies des Arts», he worked under the co-supervision of the Sapienza University of Rome and the Laboratoire d'Ethnoscénologie de l'Université Paris 8. Since 2006 he has been carrying out a transdisciplinary research project on the neurophysiology of the actor and the spectator. He edited and co-edited five books (one of them is Theatre and Cognitive Neurosciences, Bloomsbury, 2016), and authored two books: Le acrobazie dello spettatore. Dal teatro alle neuroscienze e ritorno (Bulzoni, 2013) and L'arte di Giovanni Grasso e le rivoluzioni teatrali di Craig e Mejerchol'd (Bulzoni, 2019). He is also a member of the editorial board of the review «Teatro e Storia».

More info: www.gabrielesofia.it

Antonio Camurri

PhD in Computer Engineering, full professor at DIBRIS (Polytechnic School, University of Genoa), where he teaches Human Computer Interaction (MS in Computer Engineering; MS in Digital Humanities). As art influences science and technology, science and technology can in turn inspire art: recognizing this mutually beneficial relationship, his research interests combine scientific research in human-computer interaction with artistic and humanistic research, and includes non-verbal multimodal interactive systems; computational models of non-verbal full-body expressive gesture, emotion, and social signals; interactive multimodal systems for performing arts, for the active experience of cultural content, cultural wellbeing, therapy and rehabilitation, sport and edutainment. Scientific director of Casa Paganini-InfoMus (DIBRIS, University of Genoa), former member of the Executive Committee of the IEEE CS Tech. Committee on Computer Generated Music, member of the editorial boards of the Journal of New Music Research and of Plos One, and member of the ESF College of Expert Reviewers. He is member of

the board of directors of Museo Palazzo Reale of Genoa. Author of over 150 scientific publications in international scientific journals and conferences. Coordinator of European funded projects in FP5 (IST MEGA), FP7 (ICT SAME, ICT FET SIEMPRE and FET SIEMPRE-INCO) and Horizon 2020 (DANCE - http://dance.dibris.unige.it; FET PROACTIVE EnTimeMent http://entimement.dibris.unige.it), Principal Investigator in about 20 EU-funded projects and in contracts with industry and cultural institutions, co-owner of software patents. Co-director of the Joint Research Laboratory ARIEL (Augmented Rehabilitation Lab) with Giannina Gaslini Children Hospital.

More info: http://www.casapaganini.org and http://www.youtube.com/InfoMusLab