

## **PhD and PostDoc positions in automated analysis and prediction of non-verbal full-body expressive movement and social signals**

Fully funded PhD and PostDoc positions are available at the Casa Paganini – InfoMus Research Centre ([www.casapaganini.org](http://www.casapaganini.org)), DIBRIS-Dept. of Informatics, Bioengineering, Robotics, and Systems Engineering, Polytechnic School, University of Genoa, Italy. Each research position will have a specific focus on the development of computational models, multimodal systems and interfaces, research experiment and prototypes in one of the following areas: (i) automated measurement, analysis, and prediction of full-body non-verbal individual movement qualities and emotions; (ii) automated measurement, analysis, and prediction of full-body non-verbal social signals (synchronization, entrainment, leadership).

Accepted candidates will develop a research plan in the framework of the 4-year (2019-2022) **Horizon 2020 European Project FET Proactive EnTimeMent** (<https://entiment.dibris.unige.it/>), and may be asked to participate in joint activities with research partners in EnTimeMent, including possible short residencies at EnTimeMent partners' sites.

### **Requirements**

Candidates should ideally have the following profile:

- + Master's degree in Computer Science, Computer Engineering or related disciplines;
- + Excellent technical and programming skills (Python, Java, C/C++);
- + Prior experience in at least one of the following fields: human computer interaction, affective computing, motion capture and motion analysis, multimodal interfaces, sound analysis and interactive sonification, computer vision, machine learning;
- + Ability to work independently, self-motivation, and ability to actively contribute as a member of a multidisciplinary research team including experts in computer science and engineering, movement science, cognitive neuroscience, cognitive and motoric rehabilitation, performing arts;
- + Strong commitment to advancing the state-of-the-art research and publishing in top research venues;
- + Excellent communication skills in English.

### **Applying**

To apply, please email your application to: [antonio.camurri@unige.it](mailto:antonio.camurri@unige.it) and [gualtiero.volpe@unige.it](mailto:gualtiero.volpe@unige.it)

The application should consist of a single pdf file including:

- + cover letter expressing your interest in the position and your profile relevance;
- + curriculum vitae showing academic records with tracks related to the themes of the thesis;
- + list of publications (post-doc applications only);
- + transcript of marks according to M1-M2 profile or last 3 years of engineering or related school (PhD applications only);
- + contact and recommendation letter of at least two university referents;

As a preliminary step, candidates will be invited for a Skype interview. Candidates may also be invited to a fully funded short research internship in our research team during summer 2019.

To be finally enrolled, candidates will need to pass a formal evaluation performed by a selection committee University of Genova will appoint according to the Italian laws.

The envisioned starting date for the first selected PhD candidates is November 2019. PostDoc starting date is negotiable.

### **Conditions of employment**

Hired on a fixed-term contract at University of Genoa, working full-time at the Casa Paganini-InfoMus Research Centre of DIBRIS, University of Genoa, with possible short internships at a research centre of an EnTimeMent project partner.

Duration: three years for PhD students; 2-year contract for post-docs (possible extensions available).

## **Further Information**

For any question or further details please send email to [antonio.camurri@unige.it](mailto:antonio.camurri@unige.it) and [gualtierio.volpe@unige.it](mailto:gualtierio.volpe@unige.it)

## **The Casa Paganini-InfoMus Research Centre at DIBRIS, Polytechnic School, University of Genoa, Italy**

As art influences science and technology, science and technology can in turn inspire art. Recognizing this mutually beneficial relationship, researchers at the Casa Paganini-InfoMus Research Centre work to combine scientific research in information and communications technology (ICT) with artistic and humanistic research.

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. The research team includes computer engineers and experts from the human sciences and the arts.

Scientific and technological research includes: investigation and development of computational models and of multimodal systems focusing on non-verbal, full-body, expressive, emotional, and social behavior (entrainment, leadership); sound and music computing; interactive sonification; multimodal interactive systems and serious games for rehabilitation, entertainment, sport, edutainment, museums and cultural institutions; multimedia systems and services for the creative industry: ICT for active music listening, interactive dance, theatre, cultural heritage, user-centric media and mobile systems.

The Casa Paganini – InfoMus Research Centre coordinates and participates as partner in many international projects on scientific and technological research, education, and develops multimedia systems, platforms, and applications for the creative industry and cultural institutions.

[www.casapaganini.org](http://www.casapaganini.org)

[youtube.com/user/InfoMusLab](https://youtube.com/user/InfoMusLab)

## **The EnTimeMent EU Horizon 2020 FET PROACTIVE 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. Our approach will afford the development of computational models for the automated detection, measurement, and prediction of movement qualities from behavioural signals, based on multi-layer parallel processes at non-linearly stratified temporal dimensions, and will radically transform technology for human movement analysis. EnTimeMent new innovative scientifically-grounded and time-adaptive technologies operate at multiple time scales in a multi-layered approach: motion capture and movement analysis systems will be endowed with a completely novel functionality, achieving a novel generation of time-aware multisensory motion perception and prediction systems. The proposed model and technologies will be iteratively tested and refined, by designing and performing controlled and ecological experiments, ranging from action prediction in a controlled laboratory setting, to prediction in dyadic and small group interaction. EnTimeMent scenarios include health (healing and support of everyday life of persons with chronic pain and disability), performing arts (e.g. dance), sports, and entertainment group activities, with and without living architectures. EnTimeMent will create and support community-building and exploitation with concrete initiatives, including a community of users and stakeholders, innovation hubs and SME incubators, as premises for the consolidation beyond the end of the project in a broader range of market areas.

<http://entiment.dibris.unige.it>