

**FICHE NAVETTE: DOCTORANTS IDEX**

SECTOR : Higher Education Institution

LOCATION: France, Grenoble

RESEARCH FIELD: Dance and computer science

RESEARCHER PROFILE:

- *First stage researcher,*

**INSTITUTION: Univ. Grenoble Alpes, University of Innovation**

One of the major research-intensive French universities, Univ. Grenoble Alpes<sup>\*\*1</sup> enjoys an international reputation in many scientific fields, as confirmed by international rankings. It benefits from the implementation of major European instruments (ESRF, ILL, EMBL, IRAM, EMFL<sup>\*2</sup>). The vibrant ecosystem, grounded on a close interaction between research, education and companies, has earned Grenoble to be ranked as the 5th most innovative city in the world. Surrounded by mountains, the campus benefits from a natural environment and a high quality of life and work environment. With 7000 foreign students and the annual visit of more than 8000 researchers from all over the world, Univ. Grenoble Alpes is an internationally engaged university.

A personalized Welcome Center for international students, PhDs and researchers facilitates your arrival and installation.

In 2016, Univ. Grenoble Alpes was labeled «Initiative of Excellence ». This label aims at the emergence of around ten French world class research universities. By joining Univ. Grenoble Alpes, you have the opportunity to conduct world-class research, and to contribute to the social and economic challenges of the 21st century ("sustainable planet and society", "health, well-being and technology", "understanding and supporting innovation: culture, technology, organizations" "Digital technology").

\* ESRF (European Synchrotron Radiation Facility), ILL (Institut Laue-Langevin), IRAM (International Institute for Radio Astronomy), EMBL (European Molecular Biology Laboratory), EMFL (European Magnetic Field Laboratory)

**Key figures:**

- + 50,000 students including 7,000 international students
- 3,700 PhD students, 45% international
- 5,500 faculty members
- 180 different nationalities
- 1st city in France where it feels good to study and 5th city where it feels good to work
- ISSO: International Students & Scholars Office affiliated to EURAXESS

**MANDATORY REFERENCES:**

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<sup>1</sup> Univ. Grenoble Alpes

CDP TITLE: Performance Laboratory  
SUBJECT TITLE: Gestures as frequencies: somatics and creative coding  
SCIENTIFIC DEPARTMENT (LABORATORY'S NAME): LITT&ART  
DOCTORAL SCHOOL'S: (Langues, Littératures et Sciences Humaines)  
SUPPORTER'S NAME: *Gretchen Schiller & Lionel Reveret*

The **PERFORMANCE LABORATORY** brings together UGA's performing arts, geography-urban studies and computer science communities to produce innovative *performance as research PAR*. This new interdisciplinary community of 41 academics will allow the development of cutting edge art research, digital documentation, performance literacy tools and innovative forms of material and immaterial heritage. This will push the very boundaries of the scientific disciplines themselves, both methodologically and epistemologically, and in turn, create a new pluridisciplinary ecosystem at UGA.

#### **SUBJECT DESCRIPTION:**

Within the context of the Performance Laboratory, this doctorate project ***Gestures as frequencies: somatics and creative coding*** explores the ways in which contemporary performers' (circus, dance, and trapeze arts) gestural repertoires can be captured and co created as situated and somatic data. Working across a spectrum of possible movement actions, the infra ordinary (difficult to perceive), the ordinary (daily habits) and extraordinary (expert performer) this research subject questions how multimodal and proximal body capture (image, force, sound) can be not only measured, but challenged through collaborative choreographic platforms co designed with performers.

With an interdisciplinary research team of computer scientists, sound designers, designers and performers this research project aims to challenge the ways in which proximal and lightweight approaches to performance signal capture can provide insight into micro movement repertoires of performance training. Real-time processing and latency issues will be studied through practice based explorations with professional performers with amongst others the Choreographic institutions of Grenoble: CCN2 and the CDC. In order to lighten equipment while lowering the impact on accuracy in the same time, some recent works from the Computer Vision and Computer Graphics communities have shown the benefit of combining difference sources of data such as video processing and accelerometers [1,2]. We would like to add to this the sounding of gestures which has been ignored in most ocular centric documentation and movement capture.

#### **Objectives**

The goal of this PhD thesis will be to explore how innovative technologies bodily worn interfaces can developed through the training in performance contexts. Performance training today is quite idiosyncratic and the techniques and tools are not always considered as partners during technological design. With respect to the Performance Labs objectives, this PhD thesis will focus on *site specific* art and technology co-creation with performer's movement experience as the common scientific interest. The main objective will be to develop methods for automatic inference of kinaesthetic and artistic motion cues during rehearsals. Real-time processing and visualization is an important constraint for the research work as the immediate feedback of the artists is mandatory to maintain the artistic relevance. Non real-time feedback could also be considered for more complex processing and visualization, introducing a certain latency which could be considered as a dialogue between the performer and the system.

#### **ELIGIBILITY CRITERIA**

Applicants:

- must hold a Master's degree (or be about to earn one) or have a university degree equivalent to a European Master's (5-year duration),

Applicants will have to send an application letter in English and attach:

- Their last diploma
- Their CV
- A short presentation of their scientific project (2 to 3 pages max)
- Letters of recommendation are welcome.

Address to send their application: [Gretchen.schiller@univ-grenoble.alpes.fr](mailto:Gretchen.schiller@univ-grenoble.alpes.fr)  
[lionel.reveret@inria.fr](mailto:lionel.reveret@inria.fr)

#### **SELECTION PROCESS**

Application deadline: May 15th 2018 at 17:00 (CET)

Applications will be evaluated through a three-step process:

1. Eligibility check of applications in May 17th 2018
2. 1st round of selection: the applications will be evaluated by a Review Board and results will be May 25th.
3. 2nd round of selection: shortlisted candidates will be invited for an interview session in Grenoble on May 31<sup>st</sup> 2018. The successful candidate will be informed during the month of June.

TYPE of CONTRACT: temporary-3 years of doctoral contract

JOB STATUS: Full time

HOURS PER WEEK: 35

OFFER STARTING DATE: October 1, 2018

Salary: between 1768.55 € and 2100 € (gross) per month (depending on complementary activity or not)