



Grenoble INP - UGA is a member of **international** engineering and management education and research **networks**. It is widely recognized in national and international rankings.



8 schools + **39** laboratories

8 300 students

1 300 teaching, research, administrative and technical staff

Grenoble INP-UGA is a renowned public institution of higher education and research, and a major player in the Grenoble ecosystem. It is the engineering and management institute of Grenoble Alpes University, and plays a leading role in the scientific and industrial community.

University Professor Position

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|----------------------------|---|
| Short profile | Computer Science and Learning for Image and Signal Processing |
| Body | Full Professor |
| Position number | 27 PR 0428 |
| CNU Section | 27 |
| Location | Grenoble |
| Date of recruitment | 01/09/2023 |
| Key words | Computer Science |

Grenoble INP - UGA is a leading public institution accredited with the French label "Initiative d'excellence". It offers innovative engineering and management programs, with an increasing internationalization of its course offers. The courses are grounded in sound scientific knowledge and linked to digital, industrial, organizational, environmental and energy transitions. The Engineering and Management Institute of Grenoble Alpes brings together more than 1300 staff members (teacher-researchers, lecturers, administrative and technical staff) and 8300 students, located on 8 sites (Grenoble INP - Ense3, Grenoble INP - Ensimag, Grenoble INP - Esisar, Grenoble INP - Génie industriel GI, Grenoble INP - Pagora, Grenoble INP - Phelma, Polytech Grenoble, Grenoble IAE) and the INP Prepa. Grenoble INP is also a highly-ranked institution of higher education and research, leading the way in the fields of engineering and management on an international scale. It is a member of a large number of international academic and research networks. It is part of the European University UNITE!.

As part of Grenoble Alpes University, Grenoble INP has associated guardianship of 39 national and international research laboratories and of technological platforms. The research conducted there benefits both its socio-economic partners and its students. Grenoble INP is at the heart of the following scientific fields: physics, energy, mechanics and materials; digital; micronanoelectronics, embedded systems; industry of the future, production systems, environment; management and business sciences.

Grenoble INP - UGA is an equal opportunity employer committed to sustainability. Grenoble INP-UGA celebrates diversity and equity and is committed to creating an inclusive environment for all employees. All qualified applications will be considered without discrimination of any kind.

Teaching

School : Grenoble INP - Phelma

School website: <https://phelma.grenoble-inp.fr/>

Contacts : patrice.petitclair@phelma.grenoble-inp.fr

Grenoble INP Phelma is an engineering school within the Grenoble Institute of Technology. It offers its students a wide range of courses at the cutting edge of scientific and technological progress: micro and nanotechnology, instrumentation, energy, innovative materials, information technology, biomedical engineering, process engineering, and environmental engineering. It enrolls more than 1,400 students in 11 engineering programs, one of which is an apprenticeship program, and a dozen master's programs. The teaching staff is made up of about 100 full professors and over 300 part-time lecturers. The administrative and technical team consists of about fifty employees. The school operates on two sites, the Minatec site in Grenoble and the university campus in Saint-Martin d'Hères. Phelma's three main pillars - physics, electronics, and materials - are firmly anchored in the school's mission. The school's engineering and master's programs are evolving to keep pace with the changing needs of the industry, especially in the areas of energy and digital transition.

Teaching profile:

The digital transition that has taken place in recent years has reinforced the need to provide all future engineers with a solid training in computer science, regardless of their specialization. Our graduates are known to have acquired such a background.

Our training is based on the conceptual aspects of computer science, on programming know-how and on the development of current practical software applications. The spectrum of skills taught concerns both machine-like aspects (system and network programming, C language, assembler, etc.) and user-like aspects (algorithms, object programming, databases, artificial intelligence, software engineering, etc.).

It fully considers the pressing issues of sustainable development, sobriety and the preservation of available resources.

Within the pedagogical team that he/she will lead, the candidate will be in charge of coordinating the evolution of computer-related courses, according to the transformations of the professions and technologies, both in the first year of general studies and in the tracks most impacted by this field: Embedded Systems and Connected Objects (SEOC), Signal Images Communication Multimedia (SICOM, a joint track with Ense3), Integrated Electronic Systems (SEI) and the Microelectronics and Telecommunications (MT) apprenticeship course.

The chosen candidate must have a solid background in computer science, allowing him/her to have a good overview of the field. He or she will teach primarily in the areas of algorithms, imperative and object-oriented programming, and data structures. Skills in system/parallel programming and software engineering are especially welcome. It will be necessary to adapt the pedagogy to diversified audiences, some of whom are not specialists in computer science, with an approach oriented towards the school's fields. Involvement in the school's collective responsibilities and/or responsibilities in the trainings is expected. The new professor will be expected to coordinate Phelma's computer science teaching team, coordinating all permanent and temporary computer science teaching staff to meet the institution's training needs.

Research

Team : GIPSA-lab (UMR 5216 Grenoble-INP, UGA and CNRS)

Laboratory website : <http://www.gipsa-lab.fr/>

Contact : nicolas.marchand@gipsa-lab.fr

GIPSA-lab is a multidisciplinary research laboratory with 350 staff members, including about 150 PhD students. It develops fundamental and applied researches on signals and complex systems, at the crossroads between the physical (in the sense of the real world) and digital worlds, grounded in experimental researches. The driving issues of GIPSA-lab relate to the study and transformation of diverse natural "signals" (physical, electromagnetic, acoustic, optical, biological,...) through the implementation of "systems", usually digital, necessary to process them in order to improve them, to extract relevant data or information that allow to make decisions. The laboratory has an outstanding international reputation for its research in Automation, Signal, Images, Speech, Cognition, Artificial Intelligence and Robotics, and develops projects in the strategic fields of energy, environment, communication, intelligent systems, life and health, and language engineering.

For many years, GIPSA-lab has been developing researches in advanced image and video processing, particularly through the development of deep learning techniques. These strategic axes for GIPSA-lab are supported by the MIAI Artificial Intelligence Institute and, more broadly, by Grenoble's very dynamic digital science cluster. In recent years, these activities - which should be continued - have moved in new directions, most often in interaction with industrial or institutional partners (industrialists and research centers, start-ups, other universities and research centers in France or abroad).

Research profile:

The candidate is expected to have conducted researches in computer science for the analysis and **processing of information**:

- Either information carried by graphs, point clouds: structural analysis (segmentation/clustering, similarity measures, etc.), geometric analysis and processing, statistical learning;
- Or information carried by digital images and videos: analysis and segmentation, fusion/multimodal approach, deep learning (auto/semi/non-supervised, transfer learning, representation extraction), quality, anomaly detection or deepfakes;
- Or information carried by speech signals: analysis, transformation, synthesis, deep learning (auto/semi/non-supervised, representation extraction), multimodal approaches, speech interface and automatic natural language processing, computational cognitive modeling of speech perception and production.

The successful candidate will join either the GAIA cluster (Geometries, Learning, Information, Algorithms), or the PSD cluster (Data Science) or the PPC cluster (Speech and Cognition), depending on interest.

Position assigned to a restricted area: YES

(Protection of the nation's scientific and technical potential, conditioning the appointment of the lecturer-researcher on the authorization of the Defense Security Officer).

Specific requirements or conditions

English proficiency is required, as a number of the school's courses are only taught in English. In addition, previous international experience is an undeniable asset.

Administrative activities

The successful candidate will coordinate the teaching staff of Phelma's computer science faculty, both permanent and part-time, according to teaching needs.

Specifics of the position

The teaching activities can be carried out on the two sites of the school: Grenoble and St Martin-d'Hères.

How to apply

Applicants must submit their applications on the Galaxie Platform of the French Ministry of Higher Education and Research from the 23rd of February 2023, 10 a.m. (Paris time) to the 30th of March 2023, 4 p.m. (Paris time), deadline.

Any document sent outside the Galaxie procedure will not be considered.

The interview will include simulation/situational exercises. The details will be communicated when the invitation is sent out. In addition, part of the interview will be conducted in English.