ASSOCIATE PROFESSOR RECRUITMENT
2020 SESSION

Grenoble INP, Engineering Institute of the Univ. Grenoble Alpes, labeled Initiative of Excellence, is a public institution offering engineering courses with solid basic scientific content, a high technological specialization in connection with strong societal challenges related to digital, industrial, environmental and energy transitions. and a major internationalization of its courses. Grenoble INP employs more than 1,200 people (associate and full professors, lecturers, administrative and technical staff) and has 5,500 students in its 6 engineering schools (Ense3, Ensimag, Esisar, GI, Pagora, Phelma) and the Prépa des INP. From 2020, Polytech Grenoble and Grenoble IAE join Grenoble INP and considerably expand its training offer. Grenoble INP is recognized in national rankings as one of the leaders in engineering with international visibility. It is member of international engineering networks as well as the European university UNITE!.

Grenoble INP is a mother institution of more than 30 research laboratories, some of them international, and platforms where state-of-the-art research is carried out to develop knowledge, promote it to our industrial partners and transfer it to students. Grenoble INP is thus at the heart of the technological challenges of the future: Energy and materials; Digital sciences; Micro nanotechnology; Future industry and eco-efficient production in which international rankings recognize it as a leading player.

POSITION DESCRIPTION

Short profile : Computer science, software engineering and programming, algorithmic, embedded hardware, software architectures

Category : Associate Professor

Job number : 27/61 MCF 0621

Field of expertise :
Section 1 : computer science
Section 2 : Computer Engineering, Automatic and Signal Processing

Recruitment date : 1st September 2020

Location : Grenoble

Restricted regime area (ZRR) :   ~~YES~~   NO
(French governmental protection of scientific and technological research program)

Key words : Computer science, software engineering, programming, algorithmic, embedded hardware and software architectures

TEACHING

Grenoble INP Phelma is one of the six engineering schools of the Grenoble Institute of Engineering. It offers to its students a wide range of training courses at the cutting edge of scientific micro & nanotechnologies, instrumentation, energy, innovative materials, information technologies, biomedical engineering, process engineering and environment. Phelma receives more than 1400 students in 12 engineering fields, one of which is through apprenticeship, and about ten master's diplomas. The teaching team consists of 110 full-time teachers. The administrative and technical team has 54 staff. The school is present on two geographical sites, site of Minatec Grenoble and site of Saint-Martin d'Hères.

Teaching profile :

The digital transition that has taken place in recent years confirms the need to ensure that any future engineer has a solid training in computer science, whatever his/her specialty. Our graduates have been recognized on this point for a long time. In order to complete Phema's teaching team on computer science, the candidate will be integrated and will participate in particular in exercise sessions, lab sessions, projects in first-year basic computer science of the classical or apprenticeship trainings. The lessons currently covered are structured programming, associated data structures and algorithms or object programming. The candidate will also take part in the 2nd and 3rd years of the Embedded Systems and Connected Objects (SEOC), the Signal Images Communication Multimédia (SICOM), the Integrated Electronic Systems (SEI) and the Microelectronics and Telecommunications (MT) trainings. These trainings are dealing with the software project, system programming, network programming and embedded software. The candidate will be expected to participate in the evolution of Phelma's courses, including Artificial Intelligence, Data Science, …

The candidate will have to adapt his/her pedagogy to students that are not specialists in computer science, with a practical-oriented view to the themes of the school (physics, electronics, materials), and will have to consider innovative pedagogy.

RESEARCH

TIMA is a public joint research laboratory of the Grenoble INP, Engineering Institute of the Univ. Grenoble Alpes, of CNRS (Centre National de la Recherche Scientifique), and UGA (University Grenoble Alpes) located in Grenoble, France. The research topics of TIMA cover the specification, design, verification, test, CAD tools and design methods for integrated systems, from analog and digital components on one end of the spectrum, to multiprocessor Systems-on-Chip together with their basic operating system on the other end. TIMA is a multinational team, with members and interns from all over the world. A large proportion of the research is performed in the context of cooperative projects with industrial and academic partners, supported by regional, national and European grants.

Research profile :

New algorithms and design methodologies optimized for complex innovative integrated hardware/software architectures (involving many cores for the most recent ones) are needed. Innovative architecture approaches such as non-von Neumann or neural networks ("machine/deep learning"), require the definition of optimized learning algorithms for hardware implementation for their acceleration, or the implementation of execution

models taking into account the effect of physical and electrical phenomena in disruptive and emerging technologies (e. g. technological dispersions, aging, atmospheric disturbances). The automation of protection steps against disruptions and attacks for secure systems is also a major challenge and dedicated tools can be developed. Adaptive performance control to adjust performance to uncertain environmental conditions or changing usage needs is also an important challenge. There is also an increasingly strong link between artificial intelligence-based applications, often run at the cloud level for computing power reasons, and data confidentiality, which imposes security constraints on hardware accelerators and cryptographic techniques used.

The excellence of the applicants' research activities must be certified by recent publications in high quality international journals or conferences in their field.

PARTICULARITIES AND CONSTRAINTS

The ability to teach in English is imperative, as a number of the school's courses are provided strictly in English. In addition, international experience will be a decisive asset.

In the medium term, the candidate recruited will have to take responsibilities as Teaching Units or Practical Work Platforms.

The courses may be given on the school's 2 sites : Grenoble and St Martin-d'Hères.

HOW TO APPLY

Online application must be done on the website Galaxie from february the 25th 2020, 10 am (GMT+1) to april the 9th 2020, 16 pm (GMT+1). Postal applications won't be accepted.

The interview will include simulation/situational exercises. The interview will be held in French; a part of it could be held in English. Further information will be provided with the letter of convocation.