



RECRUITMENT OF ASSOCIATE PROFESSOR 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 : (150 caractères max) **Big data: models, algorithms, systems, frameworks.**

Category : MCF

Job number : 27 MCF 0665

Field of expertise: 27

Recruitment date : 01/09/20

Location : Grenoble

Keywords : Data management, Models and computing frameworks for big data; Languages for big data; Distributed algorithms, data acquisition, data processing, data bases.

TEACHING

School: Ensimag

School website : <http://ensimag.grenoble-inp.fr/>

Contact persons : : christophe.rippert@grenoble-inp.fr, jean-louis.roch@grenoble-inp.fr

Ensimag is one of the best French engineering school in the digital and information technology domain. It offers very high-level conceptual and technological classes in the fields of computer science and applied mathematics. It prepares people for digital engineering jobs in many sectors, its core sectors such as information systems, banking, embedded systems, networks, but also the industry as a whole, for digitalization, design and decision-making tools.

Teaching profile:

Ensimag wants to consolidate and develop its teaching in the field of Data Management conception and infrastructures (massive data acquisition and processing, databases). The classes mainly concern databases, large-scale data storage and the problems related to the processing of very large amounts of data (Hadoop, Spark, NoSQL...). The person recruited must therefore have a solid general knowledge of computer science and software operational development.

He or she will have to invest himself or herself in the specialized educational tracks linked to Big Data (Mastère MS Big Data, track Information System Engineering) and in the teachings of the Ensimag common core classes. In the first year, 100% of the courses are of the common core, and the needs are particularly important for the introduction to algorithms and programming classes (eg C programming project). In the 2nd year we can mention three large projects which require deep technological skills: database, operating systems and concurrent programming. This common core is the DNA of the Ensimag. It is the foundation of our engineering students' knowledge, recognized by our partners in industry and research, that allows them to specialize while maintaining a general vision of the field and being adaptable to change. The recruited person could be required to develop computer science courses, in the full sense of the term, and to take on responsibilities in pedagogical teams and specialized tracks. In collaboration with the related pedagogical teams, he or she should be involved in the development of project-based teaching and digital training.

Once he or she has acquired experience, the recruited person will be required to take on responsibilities in the BigData Master's courses.

RESEARCH

Research laboratory : [LIG \(UMR 5217 Grenoble-INP, UGA et CNRS\)](#)

Equipes: [DATAMOVE](#), [ERODS](#), [SIGMA](#), [SLIDE](#), and [TYREX](#).

Website : <http://www.liglab.fr/>

Contacts : eric.gaussier@imag.fr, noel.depalma@univ-grenoble-alpes.fr

Grenoble Informatics Laboratory (LIG) is one of the largest laboratories in Computer Science in France. It is structured as a Joint Research Center (French Unité Mixte de Recherche - UMR) founded by the following institutions: CNRS, Grenoble Institute of Technology (Grenoble INP), Inria Grenoble Rhône-Alpes, Grenoble Alps University.

500 members of LIG (faculty, full-time researchers, PhD students, administrative and technical staff) are distributed over three sites in Grenoble and its suburbs: the Saint Martin d'Hères Campus, Minatec, and the Montbonnot Campus.

The mission of LIG is to contribute to the development of fundamental aspects of Computer Science (models, languages, methodologies, algorithms) and address conceptual, technological, and societal challenges. Increasing diversity and dynamism of data, services, interaction devices, and use cases influence the evolution of software and systems so they need to guarantee the essential properties such as reliability, performance, autonomy, and adaptability. Addressing such challenges is the objective of 24 research teams organized into 5 focus areas:

- Data and Knowledge Processing at Large Scale,
- Distributed Systems, Parallel Computing, and Networks.
- Formal Methods, Models, and Languages,
- Interactive and Cognitive Systems,
- Software and Information System Engineering.

LIG focuses on the fundamentals of Computer Science and experimental developments while taking into account new societal challenges.

Research profile :

The ability to process Big Data in many areas is a major IT challenge. This challenge requires, among other things, to develop heterogeneous complex and scalable data management models and approaches, to formalize and design query languages able to query data from multiple sources, to develop combinatorial approaches for data exploration, to develop distributed infrastructures and algorithms for data storage and management, and also to optimize the scheduling of tasks on several processors. All of these approaches require skills in query languages and algorithms in order to leverage and extend existing Big Data infrastructures. The Laboratory of Computer Science of Grenoble (LIG) is looking for candidates for excellence to strengthen its management and participate in the dynamics of the laboratory in this area. The recruited person will integrate one of the LIG teams among

DATAMOVE, ERODS, SIGMA, SLIDE, and TYREX. Its research activity will focus on developing new models, algorithms and tools to make the most of the data available. This activity may cover aspects such as (non-exhaustive list): • Query languages, • Databases, • Data mining, • Distributed algorithms.

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

Administrative activities linked to the functions of associate professor, responsibility of teaching unit or department.

HOW TO APPLY

Online application must be done on the website Galaxie from february the 25th 2020, 10 am (GMT+1) to april the 09th 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.