Institute of Engineering and Management of Grenoble Alpes University

HR EXCELLENCE IN RESEARCH

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 lecturer Position

Short profile	Real-Time Embedded Systems and Applications, Cybersecurity
Body	University lecturer
Position number	61-27 MCF 0723
CNU Section	61-27
Location	Valence
Date of recruitment	01/09/2023
Key words	Low level OS programming, embedded targets, field networks

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 s 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 - Esisar

School website: http://esisar.grenoble-inp.fr/

Contact: Laurent.Guilloton@esisar.grenoble-inp.fr

Grenoble INP - Esisar, which is a school with a 5-year curriculum, recruits about sixty students after the baccalaureate through the national Geipi-Polytech competitive examination, about thirty students after the CPGE through the national CCINP competitive examination, and about thirty students recruited upon graduation from IUTs, ATS preparatory courses, etc., and a handful of other admission routes. Grenoble INP - Esisar trains engineers to master the design of cyber-physical systems and cybersecurity, based on the fundamental disciplines of electronics, automation, computing, networks and cybersecurity.

In recent years, the school has consolidated its focus on the safety and security of embedded systems and information systems, in particular with the TRUST Chair of Industrial Excellence in Systems Confidence, the organisation of the CSAW international cybersecurity competition, the SecNumEdu certification of the IR&C programme, and the implementation of dedicated tools (cybersecurity platforms for embedded systems and information systems on the Esynov platform, and the upcoming Cyberskills@UGA project).

Grenoble INP - Esisar has strong industrial relations, particularly through the 4th year Industrial Projects, and relies on the Esynov technology platform on its premises.

The school has two programmes, the EIS programme (Electronics, Information Technology and Systems) with student and apprentice status and the IR&C programme (Information Technology, Networks and Cybersecurity) with student status.

Grenoble INP - Esisar also runs the international MISTRE (Master in Integration, Security and TRust in Embedded systems).

Among Grenoble INP - Esisar's priorities for development are the increase in the number of European enrollments; the development of the skills-based approach in connection with project-based activities carried out by students throughout the 5-year curriculum, most often in partnership with industry; the development of teaching and activities in connection with sustainable development and social responsibility, in particular through participation in the VerIT project (Greening the Digital Age).

The school also gives priority to the development of apprenticeship training. To this end, and in order to be more in line with the apprentices' missions in companies and to meet the apprentices' expectations, the aim is to develop apprenticeship training from the start of the 2023 academic year to focus more on embedded systems and, in particular, the design of embedded IT. To this end, a dedicated stream will have to be set up.

Teaching Profile:

The newly appointed University Lecturer will teach in the field of real-time embedded systems and applications: design and programming with a focus on cybersecurity and field networks.

The successful candidate will be able to teach and participate in the supervision of projects, in particular 4th year industrial projects, on all aspects related to the design and programming of real-time embedded systems, taking into account the implementation, reliability, verification and cybersecurity issues of applications. The successful candidate will be able to master the theoretical and practical aspects of microcontrollers, real-time architectures, embedded OS, field networks.

Knowledge of AI for embedded applications would be an additional asset.

The successful candidate will be actively involved in the development of the apprenticeship programme by participating in the development of the programme, taking on responsibility for specific courses and tutoring apprentices.

Within the framework of the 4th year industrial projects, the successful candidate will take on the role of CTP (Technical and Pedagogical Advisor) for embedded systems.

In line with Esisar's training and transmission activities, and in collaboration with the site laboratory, the successful candidate will be involved in the cybersecurity activities of the Esynov platform (esynov.fr).

Research

Team : LCIS (EA 3747 Grenoble-INP, UGA) - CTSYS Team

Laboratory website: http://lcis.grenoble-inp.fr/

Contacts : Oum-El-Kheir.Aktouf@lcis.grenoble-inp.fr

The LCIS is a multidisciplinary laboratory that brings together key areas of expertise to cover the fields of embedded and communicating systems, i.e. computer science, electronics and automation. More specifically, the work focuses on the study of interconnected software/hardware systems embedded in a physical environment. The LCIS develops new methods, models and tools for the design and integration of these systems, from components to behaviour and usage.

The laboratory is organised into three research groups.

The Senior Lecturer will join the CTSYS team (Safety and Security of Embedded and Distributed Systems) of the LCIS laboratory.

The activities of the LCIS laboratory are carried out in a rich ecosystem relying in particular on the Grenoble Alpes Cybersecurity Institute (Cyber@Alps), the Labex Persyval and the Institute of Artificial Intelligence (MIAI).

The CTSYS team addresses the safety and security of embedded and distributed systems. It pays particular attention to the interaction between hardware and software. From hardware to software, the main research axes of the group are: hardware security of embedded systems, software verification and testing, dependability of embedded systems, safety and security in connected object systems, safety and security of distributed and pervasive applications.

The team's main applications are: embedded and/or critical applications (aeronautics, medical applications, mobile applications, etc.), IoT and Smart-Systems (intelligent housing, smart grids, autonomous vehicles, etc.).

The successful candidate will be able to work on one or more projects recently initiated in the team, in particular :

- Security of hardware-software systems: hardware security; IoT security; vulnerability analysis; life cycle of embedded systems: design-for-security, design-for-trust; security within the compilation chain;
- Safety and security of distributed and pervasive applications: security analysis; security-by-design; security in decentralised and/or autonomous systems.

The successful candidate will be expected to contribute to the collective tasks of the laboratory, in particular to increase its visibility. He/she will have to participate in the leadership and scientific dissemination of the laboratory, and actively contribute to the search for funding for new national and international projects.

Posting in a restricted area: NO

(Protection of the nation's scientific and technical potential, conditioning the appointment of the teacher-researcher on the authorisation of the Defence Security Officer).

Specific requirements and conditions

How to apply

Applications are to be submitted on the Galaxie platform of the French Ministry of Higher Education and Research between the 23rd of February 2023, 10:00 a.m. (Paris time) and the 30th of March 2023, 4:00 p.m. (Paris time), deadline.

Any document sent outside the Galaxie procedure will not be taken into account.

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