

Assistant Professor

Ecole/Institution/Société:

TÉLÉCOM PARIS, France / Palaiseau

Discipline:

Algorithms, Engineering

Type d'emploi::

Full-time

Date de publication:

2022-03-12

Personne à contacter:

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Assistant/Associate Professor in architecture and embedded systems design

Télécom Paris, a school of the IMT (Institut Mines-Télécom) and a founding member of the Institut Polytechnique de Paris, is one of the top 5 French general engineering schools. An institution on a "human scale" but with a strong international component, Télécom Paris is recognized for its proximity to companies. This public school guarantees excellent employability in all sectors and is the leading engineering school for the entire digital vertical (from hardware layers to uses).

With its excellent teaching and innovative pedagogy, Télécom Paris is at the heart of a unique innovation ecosystem, based on interaction and the importance of project mode in its training on the one hand, and its interdisciplinary research on the other.

Its teacher-researchers are affiliated with two research laboratories: on the one hand, the LTCI laboratory, which is presented by the HCERES as a flagship unit in the field of digital sciences with remarkable international influence; and on the other hand, the i3 laboratory, Interdisciplinary Institute of Innovation (I3 - UMR 9217 of the CNRS), which pursues a multidisciplinary research program focused on innovation in the framework of a collaboration with the École Polytechnique and Mines ParisTech

Based in Palaiseau, at the heart of the Institut Polytechnique campus alongside the École Polytechnique, ENSTA, Télécom Sud Paris and ENSAE, Télécom Paris also has an incubator based in Paris at the heart of the French start-up ecosystem.

Télécom Paris is positioned as an open-air laboratory for all the major technological and societal challenges: artificial intelligence, quantum computing, IOT, cybersecurity, large-scale digital equipment (Cloud), 5G/6G, Green IT.

SCIENTIFIC CONTEXT

The rapid evolution of digital applications leads to evermore connected objects characterized by complex algorithms, severe performance and robustness requirements (autonomous vehicle, IoTs, high-speed networks, industry 4.0, smart home, etc.). Anticipating on these new demands, the SSH teams design advanced embedded systems through ambitious projects in collaboration with many academic and industrial partners.

The research focuses on the architectures of embedded systems and digital circuits under severe

design constraints. Methods to jointly optimize speed, security, complexity, and consumption are developed. The validation is based both on a mathematical formalism and on the prototyping of electronic circuits. Tests are carried out within the analysis laboratory.

The team is also characterized by a significant teaching activity in Engineering and Master courses, with a pedagogy based on practice and projects. Courses are regularly updated with the most recent technologies and design methods based on the research outcomes.

DESIRED SCIENTIFIC EXPERTISE

This faculty position requires expertise in the architecture and design methods of digital circuits and/or embedded systems at the hardware level. The candidate must be at ease with the theory and practice of embedded systems, from algorithm to prototyping, using the latest FPGA and ASIC technologies, processor cores and their software layers.

An experience in implementing algorithms and applications in embedded systems with strong constraints is desired. An ability to develop optimal architectures achieving best compromises must be demonstrated.

The position requires a significant publication experience in leading journals and conferences. The candidate will be expected to initiate new research as well as to participate in national, international and industrial projects. Experience in higher education and fluency in written and spoken English are essential.

The candidate is expected to have in-depth knowledge in information and communication technologies. Hence, the position will require :

- Experience in the study and implementation of embedded systems, including hardware modeling/design/validation methods and software development.
- Knowledge of one or more digital applications and associated algorithms such as signal and image processing, cryptography, machine learning, digital communications.
- Knowledge on microprocessor architectures and associated software development tools.
- Knowledge on optimization techniques for performance, minimum complexity and reduced power consumption.
- Knowledge on security and reliability of embedded systems.

JOB DESCRIPTION

MAIN MISSIONS OF THE POSITION

- To design and implement courses in its scientific field
- To conduct research in his/her scientific field
- To develop partnerships, collaborations and contractual relations in his/her scientific field.

ACTIVITIES

Teaching : In collaboration with the other faculty members of the department:

- Provide courses consistent with areas of knowledge, skills-set, and departmental needs;
- Teach labs and tutorials for undergraduate and graduate students;
- Serve on juries for prospective students who are applying for engineering courses, specialized masters, etc.
- Contribute to the analysis of training needs;
- Design and organize teaching activities for undergraduate and graduate students;
- Design and implement project-based teaching;

- Supervise student projects;
- Develop courses and teaching tools in the above-mentioned field.

Research:

- Engage in research activities in the scientific field concerned;
- Write proposals and participate in projects with partners from the Institut Polytechnique de Paris, the Institut Mines-Télécom or other institutions from the academic and/or corporate world, in particular in the framework of fundamental, national, or European projects;
- Carry out industrial research contracts;
- Explore and develop partnerships within the industry and establish contractual agreements.

Coordination:

- Participate in and contribute to the scientific activities of the Group (seminars, presentations, juries, etc.)

Fostering the recognition of Institut Mines-Télécom and the Institut Polytechnique de Paris:

- Disseminate research findings via scholarly writing and publication;
- Lead presentations and seminars;
- Take an active role in scholarly and professional organizations;
- Maintain close relations with academic institutions, research centers, and companies.

Other responsibilities:

- Participate in the scientific, pedagogical, and management activities of the department and/or institution;
- Where appropriate, direct and manage the staff placed under his or her responsibility or supervision;
- Report on the activities and results of the tasks for which he or she is responsible.

Job requirements

Essential Skills, Knowledge and Experience:

- In-depth knowledge, theoretical or applied, in his/her field
- Fluency in English.

Desirable skills, knowledge and experience:

- Post-doctoral or international experience in an academic or industrial laboratory appreciated ;
- Teaching experience.

Abilities and skills:

- Ability to work in a team, interpersonal skills;
- Pedagogical skills;
- Ability to write and summarize.

LEVEL OF TRAINING / EXPERIENCE REQUIRED

- Doctorate or equivalent;

- Civil servant belonging to a body recruited through the École Polytechnique or ENA or former student of the École Normale Supérieure with professional experience ≥ 3 years ;
- Diploma from a School of Engineering or Business and Management or equivalent with professional experience ≥ 5 years ;
- Bac + 5 degree or equivalent with professional experience ≥ 5 years ;
- Very high level company executive with professional experience ≥ 8 years.

HOW TO APPLY

The application includes:

- a detailed CV
- a letter of motivation
- a description of past research work, including the list of the 10 best publications (4 pages max.)
- a description of teaching experience at university level or in continuing education (3 pages max.)
- a copy of the top 3 publications
- a statement of research and teaching objectives (max. 3 pages)
- the names and e-mail addresses of two qualified personalities who can give an informed opinion on the application.

Contact: Jean-Luc Danger (jean-luc.danger@telecom-paris.fr)

Job details

Title: Assistant/Associate Professor in architecture and embedded systems design (F/H) at Télécom Paris - CDI

Employer: Télécom Paris

Location: 19 place Marguerite Perey Palaiseau, France

Job type: Assistant / Associate Professor

Field: Algorithms, Communication Engineering, Computer

Personne à contacter:

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