Professor

Ecole/Institution/Société:
TÉLÉCOM PARIS, **France / Palaiseau**

Discipline:
Artificial Intelligence

Type d'emploi::
Full-time

Date de publication:
2025-02-11

Personne à contacter:
If you wish to apply for this position, please specify that you saw it on AKATECH.tech

Assistant/Associate Professor in AI for networks - CDI

Job description

Who are we?

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.

The guiding mission of Télécom Paris is to train, imagine and undertake to design digital models, technologies and solutions for a society and economy that respect people and their environment.

We are looking for a teacher-researcher in AI for networks, the position is to be filled in the Computer Science and Networks department (INFRES).

Nowadays, we are witnessing a growing demand for participation in research projects related to AI for and in the networks of the future, as well as significant interest in teaching subjects that connect not only data science for the development of new models but also the environments hosting these models and their constraints. The market for next-generation networks (5G, 6G, and beyond) is expected to exceed 90 billion dollars within the next decade, with the embedded AI sector identified as the dominant trend of this revolution.

In this future landscape, MLOps engineers with dual expertise in AI and networking will be essential. AI is becoming pervasive and distributed at all levels of the network hierarchy. In this context, AI applied to networks (AI4NET) and deployed within them (NET4AI) is emerging as a distinct field, separate from classical AI. This field focuses not only on optimizing and managing communication infrastructures but also on addressing new challenges, such as operating on a different and near real-time temporal scale and dealing with the scarcity of computational resources (network devices are not computing servers).

In this context, some operations considered "basic" in traditional AI/ML approaches, such as using large language models (LLMs), are nearly impossible to implement in real systems with limited resources and strict performance constraints. A typical use case is the optimization of cloud/network equipment, driven by the increasing complexity of these systems.

Such operations (management plane) could potentially be facilitated by configuration or log analysis via an LLM, but in a high-speed environment, this remains unrealistic given the number of

parameters involved (throughput constraints) on the one hand, and the reaction time requirements (latency constraints) on the other. Offloading part of the processing directly into devices (in-network) is an option, but its efficiency is limited by the constraints on available resources.

It is therefore crucial (i) to investigate the limits of AI-driven computation within converged cloud/network systems, and (ii) to propose practical solutions for these environments that can guarantee a satisfactory QoS while respecting energy and/or performance constraints.

These challenges require a broad expertise, ranging from optimizing AI algorithms for network environments, distributed systems, as well as sustainability and energy resource management. The ideal candidate profile will be able to address these topics, ranging from data acquisition and analysis in networks (wired, wireless, or virtualized) to optimizing network performance while considering the energy/performance trade-off. Topics such as network architecture design and the implementation of data acquisition systems are also central to the profile

Your main tasks will be:

- Participate in the design and implementation of courses in the field of AI applied to Networks
- Conduct research in your scientific field
- Participate in and contribute to the scientific activities of the Group in which you work.
- Participate in the development of partnerships, collaborations and contractual relations in the field of AI applied to Networks.

Job requirements

To be successful in this role, you must have a PhD and comprehensive general IT skills. The candidate must have a solid understanding of networks, including physical and virtualized systems (in cloud environments). A deep understanding of network architectural concepts (such as TCP/IP networks) and the cloud is required.

In addition, the candidate must have a sound knowledge of artificial intelligence concepts, including AI workflows, data acquisition and model development. Experience of integrating AI into network systems and optimizing network performance using AI methods is considered an advantage.

You must also master AI workflow concepts (data collection, training, validation, deployment) in networked system environments (cloud, edge, core devices, etc.), have knowledge of large digital infrastructures and their management/deployment tools (cloudified systems, CI/CD, DevOps), master programming in C, C++ and/or Python. Fluency in English is mandatory.

It's a plus if you have:

- Post-doctoral or international experience in an academic or industrial laboratory appreciated
- Teaching experience
- Experience in DevOps and MLOps pipelines
- Knowledge of energy efficiency issues in high-performance systems.
- Experience in network measurements and performance evaluation (traffic generation, equipment testing, etc.).

If you're passionate about artificial intelligence, we'd love to hear from you.

Why join us?

You'll be working in a fast-growing, pleasant, green and accessible environment (particularly for people with disabilities) just 20 km from Paris (RER B and C, close to major roads, shared shuttle service from Porte d'Orléans). You will benefit from :

- 49 days' annual leave (CA + RTT)
- Flexible working hours (depending on the department's activity)
- Teleworking 1 to 3 days/week possible
- 75% reimbursement of public transport season tickets
- Proximity to numerous sports facilities, concierge service, underground car park, in-house catering, etc.
- Staff association at school and department level

Good to know: our social security contributions are than lower in the private sector

How to apply

To apply, please send the following

- a detailed CV (max 2 pages)
- a cover letter
- an activity report (table of activities) in research (supervision, problem,...), teaching (title, volume,...) and collective tasks (max 4 pages)
- teaching description (summary of activities, university-level teaching and continuing education project) (max 4 pages)
- research description (summary and results of activities, research project) (max 4 pages)
- copy of the 3 best publications, list of publications
- names and email addresses of two qualified persons who can give an informed opinion on the application

Selection: The selection process takes place in 5 steps:

- Elimination of applications that do not have the required qualifications
- Exchange with the host team to establish a list of shortlisted candidates
- Preliminary interview with Human Resources
- Hearing by the recruitment committee and ranking of the selected candidates
- Final interview with the Director of Télécom Paris

Type of contract: Permanent

Contact : Leonardo LINGUAGLOSSA , linguaglossa@telecom-paris.fr ,Jean-Louis ROUGIER jean-louis.rougier@telecom-paris.fr

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