



IMT Atlantique
Bretagne-Pays de la Loire
École Mines-Télécom

IMT ATLANTIQUE IS RECRUITING
An Associate Professor in Artificial Intelligence
for Network Management and Security
<http://www.imt-atlantique.fr>

Start date: 2nd Semester, 2019

IMT Atlantique is a leading general engineering school (among the top 400 universities in the world in THE World University Ranking 2019, ranked as the third engineering school in France) and is internationally recognized for its research (present in four themes of the Shanghai ranking). It is part of the Institut Mines-Télécom and comes under the aegis of the Ministry of industry and digital technology.

With 3 campuses, each with its own incubator, in Brest, Nantes and Rennes, and a site in Toulouse, IMT Atlantique aims to combine digital technology, energy and the environment to transform society and industry through training, research and innovation and to be the leading French institution of higher education and research in this field on the international scale.

The School awards two apprenticeship engineering diplomas, master's degrees, specialized master's degrees and doctorates.

IMT Atlantique is responsible for engineering courses based on cutting-edge research carried out in 6 joint research units: GEPEA, IRISA, LATIM, LABSTICC, LS2N and SUBATECH. Partners include CNRS, INRIA, INSERM, universities and engineering schools. The school builds on its research excellence in its flagship areas (energy and digital technology, cybersecurity, the environment and digital technology, industry of the future, nuclear, health and the digital sector, risk and risk interactions) and by linking scientific fields to meet tomorrow's challenges: digital transition, environmental transition, industrial transition, energy transition, health of the future and basic research.

Keywords: Machine Learning, Data Analysis, Network Monitoring, Autonomous Networks, Security and Resilience, Quality of Service and Quality of Experience, Network Architectures

Administrative status: Associate Professor

Required profiles

For the position in Computer Science/ Artificial Intelligence for Network Management and Security, you should hold a doctorate or an equivalent recognised qualification with a first professional experience (post-doctorate, industrial R&D, etc.) and international experience.

You will be expected to contribute to the teaching on our various courses, more specifically on the common core engineering course and on the in-depth courses in computer science, networking, cybersecurity and artificial intelligence.



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You will conduct research on the application of machine learning and artificial intelligence techniques to the monitoring of telecommunication networks for the detection of anomalies or attacks, fault localization, quality of service measurement and autonomous network management. In particular, you will contribute to questions related to network security and resilience in the era of artificial intelligence.

You will contribute to the school's actions for socio-economic development and internationalisation in its various forms

In-depth knowledge of the following specialty areas will be appreciated:

- methods and environments for machine learning: classification (supervised or not), Bayesian models (parametric and non-parametric), deep neural networks, stochastic control; scikit-learn, TensorFlow, Spark environments
- telecommunication networks: IP networks, Internet protocols (BGP, DNS), software defined networks (SDN) and network function virtualization (NFV), applied cryptography and security (TLS), traffic engineering, performance evaluation (queuing theory), network simulation or emulation (NS-3, Mininet)
- experience in network data analysis: classification, fault detection / localization, intrusion and / or denial of service attacks detection; collection, anonymisation and storage, data labeling, accelerated packet processing (DPDK)

Given our commitment to promoting diversity in the workplace, in particular within our Faculty, particular attention will be paid to applications from women, people with disabilities, international candidates and candidates from the entrepreneurship sector.

Position environment

The Department of Computer Science is based on the Brest campus. It has about 25 permanent members including 21 permanent lecturer-researchers. The department is part of the UMR CNRS 6285 Lab-STICC developing research in communication systems, from sensors to knowledge, [in particular the research teams of the CID department which are interested in the extraction of information and decision-making, for example for computer security or the environment.

Missions

Under the responsibility of the head of department and in close cooperation with the support departments, the successful candidate will participate in teaching, research, development and international development missions. He/she should be actively involved in regional, national and international partnerships. He/she will be called upon to exercise responsibilities in teaching and in collaboration with research and innovation stakeholders, and to contribute more generally to the smooth collective functioning of the school and its international influence.

In teaching, the successful candidate will:

- teach in the teaching teams related to Computer Science and Networking
- develop, deliver and coordinate different courses (lectures, practicals, tutorials, , projects, PBL, MOOC, etc.) and teaching methods (project-based learning, face-to-face or distance learning) for a varied public (engineering students, master's students, interns in continuing education) in computer science, networking, cybersecurity, data analysis and machine learning



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- participate in activities to support the students' in-company training (company visits, internship boards, tutoring, etc.) or international mobility.

In research, the successful candidate will:

- carry out his/her research in relation to one or more themes developed in one or more teams of UMR CNRS 6285 Lab-STICC.
- participate in the development of research projects in his or her field of expertise at the regional, national and international level.
- publish his/her work in national and international scientific journals and present it at appropriate congresses.
- provide scientific support for master's level trainees and doctoral students.

In terms of transfer to companies and within society, the successful candidate will:

- participate in and promote ITM Atlantique's actions, in particular through industrial and academic collaborations through chairs (academic or industrial), joint laboratories and other mechanisms such as standardisation or standardisation.
- contribute to the dissemination of information on research in society through popular scientific activities, publications and interventions with the general public.

At the international development level, the successful candidate will:

- contribute actively to the school's actions as part of its international development through its research and training network: setting up partnerships, projects, participation in international training programmes (specialised masters or short programmes for example), representation of the school with partners, etc.

Qualification and skills

He/she should demonstrate the ability to carry out training, research and transfer of research / innovation missions:

- strong motivation for teaching, research and innovation, dynamism and potential leadership capacity in these areas.
- pedagogical involvement, and participation in innovative learning systems (or, a demonstrated willingness to invest in this field).
- Ability to teach and supervise teaching projects in an industrial and/or international multidisciplinary context, and knowledge of industrial and/or international environments.
- An appetite for research in partnership with the industrial world, an interest in valorisation and applications and openness towards the business world.
- An appetite for international collaboration
- the ability to teach in English
- the capacity to adapt to thematic developments and an interest in interdisciplinarity.
- the ability to develop synergies with teams other than his/her own, whether within the department, the joint research unit or more broadly within the school, in teaching or research.

He/she should have strong skills in the particular specialty and have demonstrated:

- recognition of his or her research activities in the scientific community at the national and international level;



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- experience in the management of research contracts, combined with a good knowledge of industrial environments;
- international experience;
- experience in the theoretical and practical teaching of the above-mentioned courses and their applicability in industry; in particular, previous experience in teaching cybersecurity will be appreciated;
- knowledge and practice of innovative pedagogies;
- a perfect command of English for teaching;
- an excellent ability to integrate a team and a good sense of human relations.

A project which combines both research and teaching is required.

Conditions for applying:

Level of education and/or experience required:

- Doctorate or engineer with professional experience in the field of data analysis, telecommunication networks, or cybersecurity.
- Civil servant recruited through the École Polytechnique or the ENA or former student of an École Normale Supérieure with professional experience > 3 years
- Diploma from an engineering school or equivalent with professional experience > 5 years
- 5 years' higher education degree or equivalent, with professional experience > 5 years
- Highly qualified company executive with professional experience > 8 years

A CNU qualification in section 27 or 61 is not required but would be a plus.

ADDITIONAL INFORMATION

It is highly recommended to contact :

- Serge Garlatti, head of department of Computer Science
serge.garlatti@imt-atlantique.fr - tel: (+33) 2 29 00 14 53
 - and Sandrine Vaton, professor in the Computer Science department
sandrine.vaton@imt-atlantique.fr – tel: (+33) 2 29 00 10 29
- to prepare your application.

TO SUBMIT YOUR APPLICATION:

Please send an email to the following address: recrut19-mc-info@imt-atlantique.fr for the attention of Marion TONDUT - HR Director of IMT Atlantique Bretagne - Pays de la Loire, a single PDF file containing in order:

- detailed CV
- motivation letter
- letters of recommendation
- report of the thesis defence
- reports of the two members of the thesis committee
- teaching and research projects
- any other information that may support your application

Deadline for application: **September 30th, 2019**