



IMT Atlantique

Bretagne-Pays de la Loire
École Mines-Télécom

JOB ADVERTISEMENT
IMT ATLANTIQUE
is recruiting an Associate Professor in cybersecurity and protection of
medical data
Brest campus

<http://www.imt-atlantique.fr>

Start date: December 2020

Keywords: medical data security, watermarking/crypto-watermarking, secure data processing

Administrative status: Associate Professor, civil servant of the French Ministry of Economy and Industry

Presentation of the school:

IMT Atlantique, internationally recognized for the quality of its research, is a leading general engineering school under the aegis of the Ministry of Industry and Digital Technology, ranked in the 3 main international rankings (THE, SHANGAI, QS)

Situated on 3 campuses, Brest, Nantes and Rennes, IMT Atlantique aims to combine digital technology and energy to transform society and industry through training, research and innovation. It aims to be the leading French higher education and research institution in this field on an international scale. With 290 researchers and permanent lecturers, 1000 publications and 18 M€ of contracts, it supervises 2300 students each year and its training courses are based on cutting-edge research carried out within 6 joint research units: GEPEA, IRISA, LATIM, LABSTICC, LS2N and SUBATECH.

Presentation of the scientific field:

The Image and Information Processing (ITI) department of IMT Atlantique is recruiting an Associate Professor to reinforce the Cyber-Health team of the Laboratory of Medical Information Processing (LaTIM Inserm UMR 1101). LaTIM is a joint research unit of Inserm (French National Institute of Health and Medical Research), the University of West Brittany (UBO) and IMT Atlantique, associated with the CHRU (University research hospital) of Brest.

The ITI department is in charge of teachings in mathematics, signal and image processing so as cybersecurity. It develops within LaTIM, a multidisciplinary research centered on the continuous optimization of therapeutic actions by means of the integration of multimodal information where information and health sciences enrich each other.

The recruited associate professeur, will contribute to teachings in cybersecurity and information processing within our different engineer trainings, in particular in “deepening themes” (TAF) or majors CYBER (Cybersecurity), HEALTH (Healthcare Engineering) et MCE (Mathematical and Computational Engineering). Teachings will take various forms (lectures, project supervision, inverse class, MOOC). The recruited person will participate an develop new teaching within the above TAF on the protection of data (traceability, integrity, fight against information leaks) and the secure processing of externalized/mutualized data. He or she will also contribute to teachings in basic sciences (good cybersecurity practices, mathematics, signal processing, algorithmic). IMT Atlantique pays particular attention to the quality and pedagogical methods directed to provide to its students the useful skills for their professional future. A contribution into innovative learning approaches will be necessary. In addition, the recruited person will participate to the follow up of students during their stays in companies (company visiting, tutoring, follow-up of end-of-study internships, and so on).

In research, the recruited person will contribute to reinforce the Cyber Health team of LaTIM Inserm UMR1101. At the era of big/open data and of artificial intelligence in the healthcare domain (Health Data Hub, “Plan France médecine génomique 2025”), LaTIM develops innovative solutions adapted to the domain in order, for instance, to protect data from their acquisition to their reuse. Three themes of

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research are considered: integrity control of data (digital content forensics); the protection of data (images, databases) by making use of watermarking or crypto-watermarking with the intention of data traceability and confidentiality and to fight against information leaks by authorized users; the secure processing of externalized/mutualized data (e.g. machine learning, decision aid support)) with the help of secure multiparty computation, homomorphic encryption ... As soon as he or she takes her position, his or her research activity will be part of the project of the Cyber-Health team of LaTIM/Dpt ITI on the protection of data (integrity, traceability, confidentiality) and the secure processing of this ones in the context of Big Health Data and AI in the domain of decision aid support in medical imaging, the reuse of clinical data (epidemiology) and of genetic data (GWAS - genome-wide association study), as well as in the frameworks of the medical data platform initiatives supported by Inserm. The candidate will also participate to the innovation and valorization actions of Cyber-Health (Labcom SePEMED and ADMIRE).

In this context, to join our teams:

You will need strong skills in the majority of the following fields, on one hand on: **watermarking**, the **secure processing of data** with the help, for instance, of secure multiparty computation and cryptography; **crypto-watermarking**; traceability (fight against information leaks) and **integrity control of data** (digital content forensics – image and videos); and, on the other hand, of **information processing** (big data, datamining, AI – machine learning) or of **multimedia processing** (signal and image). The recruitment concerns candidates with security, mathematic and information processing profile turned towards the protection of data and the security of their processing. Knowledges about the medical domain, medical standards (IHE, DICOM), databases, and about the sector of Information and Communication Sciences (ICTs) are recommended as well as a primary experience in teaching.

In the department, as a research lecturer, you will fulfil the main rôles of training, research and development in academic and industrial circles, as well as internationally.

Your scientific skills and your experience in project management will enable you to develop and participate in partnerships with partners from the economic and academic world, at regional, national and international levels.

You will contribute to the development and influence of the school through high-level publications, a proactive attitude to contract negotiation and an active contribution to the life of the school.

Your significant experience in designing and supervising teaching activities will allow you to promote learning by confronting learners with multidisciplinary problems. You are particularly interested in the competency-based approach, innovative teaching methods and the diversification of assessment methods.

You will take on responsibilities in the management of teaching and training units.

Your command of English is strong enough to teach in this language.

You are really dynamic and know how to develop synergies and manage projects in training and research in a multidisciplinary environment.

Sensitive to the challenges of sustainable development and social responsibility, you act in an ethical and responsible manner and have demonstrated that these dimensions are taken into account in the projects you have carried out.

The post is based on the Brest campus. Travel in France and abroad is to be expected.

You will be asked to submit an integration project for all the tasks described to demonstrate your motivation for the job.

(for more information on the selection criteria, consult the job description of a lecturer-researcher – Associate Professor on the IMT Atlantique school website)



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Level of training and/or experience required:

- Doctorate in the field of data protection/security (watermarking, secure processing of data, crypto-watermarking, digital content forensics).
- Official from a body recruited through the École Polytechnique or the ENA or former student of an École Normale Supérieure with professional experience > 3 years
- Highly qualified company executive with professional experience > 8 years

For any further information, you can contact

Gouenou Coatrieux à IMT Atlantique
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To submit your application:

To submit your application send an email to [**recrut20-mc-itycyber@imt-atlantique.fr**](mailto:recrut20-mc-itycyber@imt-atlantique.fr)

Deadline for applications: **September 30th, 2020**

Date of Recruitment committee: **October, 2020**

Recruitment: **December 2020**