

**FACULTY RECRUITMENT PROFILE**  
**Assistant Professor in Tenure Track**  
**at CVN / Department of Mathematics**  
**Reference : GMCFCDDCVN03**

**Title:** Assistant Professor in Tenure Track

**Position:** Assistant Professor in Tenure Track **in Artificial Intelligence** at the Department of Mathematics of CentraleSupélec, Paris-Saclay Campus / CVN Laboratory, Inria OPIS team, 5 year « CDD de droit public »

**CNU Section:** 26 (applied mathematics) or 61 (signal / image)

**Domain / Job profile:** Optimization Methods for Artificial Intelligence

**Keywords:** optimization algorithms, data science, graphs, neural networks, biomedical imaging, image reconstruction, image analysis

CentraleSupélec is a French major public academic institution (“Grand Établissement” in French) under the authority of the Ministry of Higher Education and Scientific Research and the Ministry of the Economy, Industry and Digital Technology. Its main missions include: the training of high-level scientific general engineers, research in engineering and systems sciences, and executive education. CentraleSupélec has a strong international standing with affiliated institutions, notably in China, India, and Morocco. It is consistently ranked in the top 3 engineering degree-granting institutions in France.

The Department of Mathematics is an academic department of CentraleSupélec whose educational scope covers the broad field of Mathematics for the 3-year CentraleSupélec Engineering curriculum. The department also has close links with the Master “Mathematics and applications” of Université Paris Saclay and specialized masters in Data Science and Artificial Intelligence at CentraleSupélec.

The CVN (Center for Visual Computing) is a joint CentraleSupélec-Inria research unit. The CVN researchers are also members of the CNRS Mathematics Federation of CentraleSupélec. Its main topic of research is the design of advanced optimization methods for the analysis of complex massive datasets, in the context of inverse problems and machine learning problems, particularly involving biomedical data. These activities are organized around 3 targeted themes: (i) large-scale optimization algorithms, (ii) graph mining, (iii) neural networks.

**Academic profile:**

The successful candidate will join the CentraleSupélec Department of Mathematics. He/she is expected to engage with courses on optimization, statistics and machine learning (including deep learning), and graph mining

- in the 3-years core curriculum at CentraleSupélec,
- in the masters in Artificial Intelligence and DSBA (Data Science and Business Analytics),
- as well as in the continuous education program.



He/she will also participate in the supervision of student projects and in various activities related to the AI hub.

As some of these courses are taught in English, ability to teach in English is a must.

Following CentraleSupélec's recruitment policy for Tenure Track positions, a change to a permanent contract will be examined during the five years by an internal commission within the institution.

**Research profile:**

The successful candidate will join the CVN Laboratory, whose research interests are focused on mathematical tools in the field of artificial intelligence. These include optimization methods, Bayesian approaches, graphs, inverse problems, and neural networks. The applications of these techniques mainly concern image reconstruction, image restoration, and image analysis, with emphasis on the medical/biomedical domains. Candidates are expected to demonstrate the ability to develop/undertake research in at least one of these core domains of CVN activity.

Candidates must demonstrate the ability to collaborate and lead research activities, by participating in the supervision of students both at the master and PhD levels, and they should be able to establish academic and industrial partnerships on this activity, at the national and international level.

**Candidate profile:**

- Candidates must hold a doctorate (PhD) in the field of Signal and Image Processing, Applied Mathematics or a closely related field.
- Candidates must demonstrate outstanding research ability, particularly through their publications record in major, competitive international conferences and in top-level international journals (publication expectations will depend on experience).
- Candidates are expected to have a taste for teamwork.
- Candidates are expected to engage in the supervision of research work in line with the themes of the laboratory.

**Recruitment interview:**

For the candidates selected for the audition, this one will take place in three stages:

- A presentation of the candidate's background and research/teaching project, expected to be in line with those of the CVN;
- An outline of a lecture, given in English, on a problem, for which the subject will be identical for all candidates, that will be specified after the initial candidate selection;
- Question time and exchange with the members of the committee.

The duration of the three parts of the audition will be specified in the invitation letter.



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**Candidatures:**

A single file in pdf format, including:

- A cover letter
- A detailed CV (teaching experience, research, mobility, publications, etc.)
- A detailed research / teaching project aligning with the CVN interests
- A copy of an official identity (National ID, Passport) document
- A copy of the doctoral degree
- And any documents that attest previous experience, e.g. up to three reference letters or a short list of referees, etc.

must be sent by email only to the two contacts below 31/05/2020 at the latest with the reference **GMCFDDCVN03**:

Lorraine Maret, human resources: [lorraine.maret@centralesupelec.fr](mailto:lorraine.maret@centralesupelec.fr)

Elodie Ledoux, human resources: [elodie.ledoux@centralesupelec.fr](mailto:elodie.ledoux@centralesupelec.fr)

**Scientific contacts:**

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Erick HERBIN, Director of the Department of Mathematics, [erick.herbin@centralesupelec.fr](mailto:erick.herbin@centralesupelec.fr)

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