



Henri Fayol Institut / Mines Saint-Etienne
Application for the post of Assistant Professor (*Maître Assistant*) in
mathematics applied to data science

The École Nationale Supérieure des Mines de Saint-Etienne (EMSE), École de l'Institut Mines Télécom, under the supervision of the Ministry of the Economy, Industry and Digital Technology, is assigned missions of education, research and innovation, transfer to industry and scientific, technical and industrial culture.

The EMSE consists of 1,800 engineering and research students, 420 staff members, a consolidated budget of €50M, three sites on the Saint-Etienne campus (Loire Department), a campus in Gardanne (Bouches-du-Rhône Department), five educational training and research centres, seven research laboratories, a scientific, technical and industrial cultural centre (La Rotonde) and development projects in France and abroad.

The Henri Fayol Institute is one of the five educational training and research centers. It gathers researchers and teachers who work in applied mathematics, computer science, operational research, environmental engineering and management sciences. The Applied Mathematics Department (called GMI for Génie Mathématique et Industriel in French) is one of the 4 departments of the Henri Fayol Institute. The Applied Mathematics Department carries out research related to models for decision and in particular probability, statistics, optimization and operational research. The Department offers a permanent position to an applied mathematician who will contribute to one or many of the following 3 research themes:

- The statistical modeling (meta-modeling) of expensive data where some inputs are discrete, others continuous. Such data occurs in the context of real experiments or high-fidelity computer codes.
- Bayesian and other probabilistic approaches to solve inverse problems. New methods are needed in particular when input or output data are functional (typically of time or space). The high dimensionality of the parameters is a salient feature of such problems.
- The optimization of non-linear systems in high dimension. The methods to be developed should target global optima and be robust to parameters uncertainties.

The candidate, through these 3 research directions, should contribute to the ability of the Applied Mathematics Department to handle projects related to new data sources in industrial and natural systems. For example, the H. Fayol Institute hosts the prototype IT'm Factory that could be a source of data for applications by the hired researcher.

1) Candidate profile and assessment criteria

The candidate should hold a doctorate in applied mathematics or engineering with a strong background in mathematics. Significant experience of teaching in the aforementioned fields (teaching instructor, contracted teacher) at under-graduate or post-graduate cycle levels will be appreciated.

The successful candidate will contribute to the research theme applied mathematics for data science. She/he should have a strong experience in research already recognized through publications and communications.

Command of the English language is essential. Given the School's international development projects, significant international experience is strongly recommended. Failing this, an international mobility with a foreign partner institution should be envisaged during the three years following recruitment.

Aptitudes for working in a team will also be an important criterion.

2) Missions

Teaching

The teaching mission consists of undertaking both supervised and practical courses, along with the tutoring of projects and internships/work experiences, essentially in the teaching of engineering and Masters of Science diplomas.

The candidate should be capable of covering a relatively large spectrum within the teaching of probability, statistics, numerical methods for solving PDEs, optimization.

A minimum number of hours must be completed. Activity design, supervision and course management are included in the expected teaching activities. The candidate is expected to contribute to creation and management of projects that constitute a part of the study curriculum at EMSE.

Research

In relation to the 3 research themes described above, the following tasks will be allocated to the candidate:

- carry out research at an international level in at least one of the 3 aforementioned themes. The results of the research are expected to be published in international journals.
- participate to applied research projects with other academic and private partners such as the research Chair in Applied Mathematics OQUAIDO.
- progressively become autonomous in the writing of proposals to fund temporary research positions such as doctoral and post-doctoral students.

These assignments will be carried out on the Saint-Etienne (42) EMSE campus.

3) Recruitment Conditions

By application of the specific status of teaching staff of the Mines Telecom institute (modified decree n° 2007-468 of the 28th March 2007), candidates should hold a doctorate diploma or a similar recognized qualification level, equivalent to the required national diplomas.

In addition, candidates should have European Union citizen status as of the day of the application submission (law 83-634 of the 13th July 1983 referring to the rights and obligations of public employees; Art. 5 and 5 bis).

Required date for taking up the position: **October the 1st 2019**

4) Application procedures

The application file should include:

- An application cover letter
- A curriculum vitae outlining teaching activities, research work and where appropriate, relations with economic and industrial sectors (maximum 10 pages)
- Recommendation letters, at the discretion of the candidate,
- A copy of the Doctorate diploma (or PhD),
- A copy of an identity document

These documents should be addressed for the attention of the Director of the École Nationale Supérieure des Mines de Saint-Étienne, at the latest by April the 30th 2019, date as per postmark, and sent to:

École nationale supérieure des Mines de Saint-Étienne
For the attention of Madame Elodie EXBRAYAT
Department of Personnel and Human Resources
158, Cours Fauriel
42023 Saint-Étienne cedex 2
France

Candidates selected for an interview will be informed rapidly. Part of the interview will be held in English. Cover letters, CVs and application files written in English will be accepted, but applicants will have to demonstrate in their application file their ability to efficiently communicate in French with students, fellow faculty members and the school administration.

5) Further information

For further information concerning the post, contact:

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For further administrative information, contact:

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