
PhD position (M/F) – Thesis offer

Reference: DS_MF_PhD_AXA_022018

Research topics **Deep Probabilistic Modeling**

Department Data Science

Publication date 22 Feb 2018

Start date Mid 2018

Duration Duration of the thesis (3 years)

Description We are looking for an enthusiastic and talented Ph.D. candidate to work on the development of novel advanced statistical methodologies in the area of deep probabilistic modeling, with applications in life and environmental sciences.

The main focus of the project is to develop novel inference and computational methods to accurately and tractably quantify uncertainty in deep probabilistic models. In particular, the project will target the application of Bayesian Deep Gaussian Processes and Bayesian Deep Neural Networks to large-scale data modeling problems. The successful candidate will develop and apply a range of techniques in Markov chain Monte Carlo inference, stochastic variational inference, and linear algebra, and will explore the adaptation of these techniques on novel hardware to accelerate computations. A large portion of the project will be dedicated to the development of novel methodology, but the project will also contain an exciting component of applied work in life and environmental sciences.

The project is linked with a Chair in Computational Statistics entitled "Novel Computational Approaches to Risk Modeling" awarded to Dr Filippone from the AXA Research Fund for the duration of 7 years (2016-2023). The successful candidate will participate in the research activities in machine learning in the Department of Data Science at EURECOM, and will engage in a number of exciting ongoing international collaborations.

The successful candidate will be enrolled in the doctoral school of the Pierre and Marie Curie University (UPMC), Paris, France, that will award the final Ph.D. degree.

Main tasks and responsibilities include:

- Discuss, plan, and perform research in a stimulating environment
- Develop statistical approaches for data analysis from fundamental principles
- Publish findings in peer-reviewed journals and present at international conferences
- Produce software tools to enable for the use of the wider scientific community
- Finalize Ph.D. training and project within the three years of the Ph.D.
- Work in an interdisciplinary team of international scientists

Requirements Essential (E) and desirable (D) requirements include:

- (E) - Completion of a degree in Computer Science, Statistics, Physics, Mathematics, Electronic Engineering, Control Engineering, or related disciplines
- (E) - Proficiency in programming with languages such as Python, MATLAB, R or C++
- (E) - Good written and oral communication skills, and effective team-work skills
- (E) - We are looking for highly self-motivated candidates who are curious and enthusiastic about scientific research, and have a proactive attitude
- (D) - Experience with life or environmental science applications and track record of publication are desirable

**Application**

The application must be done in English and must include:

- Covering letter
- Curriculum Vitae
- Summary of academic performance (e.g., academic transcript)
- Name and contact details of two referees

There is no deadline to submit applications – that is – suitable candidates will be interviewed and applications will be accepted until the position is filled.

Applications should be submitted by e-mail to maurizio.filippone@eurecom.fr and secretariat@eurecom.fr with the reference: DS_MF_PhD_AXA_022018.

For additional information or informal queries please email Dr Filippone at maurizio.filippone@eurecom.fr

Postal address

CS 50193 - 06904 Sophia Antipolis, France

Contact

secretariat@eurecom.fr

Fax number

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EURECOM is a French graduate school and a research center in communication systems based in the international science park of Sophia Antipolis, which brings together renowned universities such as Télécom ParisTech, Aalto University (Helsinki), Politecnico di Torino, Technische Universität München (TUM), Norwegian University of Science and Technology (NTNU), Chalmers University (Sweden) and Czech Technical University in Prague (CTU). The Principality of Monaco is a new institutional member. The Institut Mines-Télécom is EURECOM's founding member.

EURECOM benefits from a strong interaction with the industry through its specific administrative structure: Economic Interest Group (kind of consortium), which brings together international companies such as: Orange, BMW Group Research & Technology, Symantec, Monaco Telecom, SAP, IABG.

EURECOM deploys its expertise around three major fields: Digital Security, Data Science and Communication Systems. EURECOM is particularly active in research in its areas of excellence while also training a large number of doctoral candidates. Its contractual research is recognized across Europe and contributes largely to its budget.

Thanks to its strong ties set up with the industry, EURECOM was awarded the "Institut Carnot" label jointly with the Institut Telecom right from 2006. The Carnot Label was designed to develop and professionalize cooperative research. It encourages the realization of research projects in public research centers that work together with socioeconomic actors, especially companies.