PhD position (M/F) – Thesis offer (M/F)
(Reference: DS_MF_PhD_WindMill_Fev2019)

Research topics
Analysis and Optimization of Collaborative Machine Learning

Department
Data Science

Publication date
15/02/2019

Start date
01/09/2019

Description
EURECOM invites applications for an Early Stage Researchers / PhD student position as part of WindMill project (Integrating WIreless Communication Engineering and MachIne Learning). WindMill is an international, multidisciplinary and multisectorial training network funded by the European Union's Horizon2020 research and innovation program. More information [https://windmill-itn.eu/](https://windmill-itn.eu/)

The project offers an excellent research and training program:

- The successful applicant will join a network of leading Universities, research institutes and companies in the field of wireless communications and machine learning.
- He/She will be primarily hosted by EURECOM with stays in partner institutions (secondments).
- He/She will attend training program including regular summer and winter schools to build technical skills as well as soft skills.
- He/She will receive a very competitive and complemented by mobility or family allowance.
- He/She will be enrolled in the PhD program at Sorbonne Universités (Paris).

The successful applicant will aim at improving the theoretical foundations of Machine Learning methods applied in a decentralized multiple agents scenario. Such problems are becoming more and more frequent with the strong development of wireless communications and autonomous devices (e.g., autonomous cars, drones), which leads to a collective decentralized intelligence. Machine Learning allows the agents to learn through training how to cooperate (e.g., using deep neural networks). Yet, it remains an open problem to determine what methods should be used and how they should be trained for optimal performance. In addition, there is also no theoretical guarantee for the performance. The goal of this doctoral project is to tackle such open problems and show how the obtained bounds and methods can be applied in real world applications to improve the state-of-the-art results.

Requirements
Education Level / Degree: Master
Field / specialty: Signal Processing/Mathematics/Data Science
Other skills / specialties:
- Excellent study records, in particular an ability and a taste for analytical and theoretical subjects.

EURECOM specifically encourages women to apply with a view towards increasing the proportion of female researchers.
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- Proficient in English.
- Motivation to collaborate in an interdisciplinary international team.
- Motivation to participate in training programs.
- Ability to travel and work within Europe.

Other important elements:

All candidates must meet the following requirements to be considered for this post:

a) Early-Stage Researchers (ESRs) shall at the time of recruitment by the host organization be in the first four years (full-time equivalent research experience) of their research careers and not yet have been awarded a doctoral degree. Full-time equivalent research experience is measured from the date when a researcher obtained the degree which would formally entitle him or her to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the researcher is recruited.

b) At the time of recruitment by the host organization, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organization for more than 12 months in the three years immediately prior to the recruitment date. Compulsory national service, short stays such as holidays and time spent as part of a procedure for obtaining refugee status (under the 1951 Geneva Convention and the 1967 Protocol) are not taken into account.

Application

The application must include:

- A cover letter describing the motivation for applying to the position (1 page).
- A Curriculum Vitae including education qualifications, research and industrial experience, awards and fellowships, any additional scientific achievements.
- A copy of the Master’s certificate (or equivalent) along with an official transcript of the completed subjects and grades achieved in the course of the Master’s program.
- Contact information of two scientific references that could be contacted if the candidate passes successfully the first selection.
- A description of the research as envisioned by the candidate (1 page).

Applications should be submitted by e-mail to secretariat@eurecom.fr with the reference: DS_MF_PhD_WindMill_fev2019

Postal address

CS 50193 - 06904 Sophia Antipolis, France

Contact

secretariat@eurecom.fr
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.