
Ph.D. position - Thesis offer (M/F)

(Reference: CS_NN_PHD1_H2020_052017)

Research topics	Data-Driven Network Control and Orchestration in 5G						
Department	Communication Systems Department						
Issue date	1 st of June 2017						
Start date	3rd quarter 2017 (1 st of September 2017)						
Duration	Duration of the thesis						
Description	<p>A Ph.D. position is available in the Communication Systems Department at EURECOM in the area of heterogeneous 5G radio access networks. The successful candidate will conduct experimental system research in developing and applying machine/deep learning techniques and data analytics to optimize the performance of radio access networks in emerging 4G-5G computing network applications. Cognitive methods and algorithms will be developed to allow automated network programmability leveraging the monitoring information (data-driven network). The resulted decisions and actions are enforced through SDN controller and NFV orchestrator based on predicted user, network, and infrastructure performances.</p> <p>We plan to implement such data-driven control methods/algorithms on the OpenAirInterface (OAI) software defined radio platform following SDN and NFV principles. Evaluation of mechanisms proposed will done through emulation and real experimentation in a small scale deployment at EURECOM. The successful candidate will work closely together with research engineers and PhD students, in developing/improving strategies for 5G/LTE network performance optimization.</p> <p>The work will be carried out in the framework of the two 5GPPP Europeans. Both projects aim at building a flexible and automated network for 5G systems for different type of deployment (centralized and distributed) , and its consortium comprises strong industrial partners as well as a number of world-class universities. It is funded by the European Commission under the H2020 Framework Programme. The candidate will actively participate to the progress of the projects.</p>						
Requirements	<table border="0"> <tr> <td style="vertical-align: top;">Education Level / Degree:</td> <td>Master degree</td> </tr> <tr> <td style="vertical-align: top;">Field / specialty:</td> <td>Computer science, electrical engineering, telecommunications, or applied mathematics</td> </tr> <tr> <td style="vertical-align: top;">Technologies:</td> <td> <p>A very good background current technology landscape 5G, LTE (Rel 10-14), SDN/MEC/NFV, IoT</p> <p>Strong Machine Learning, data mining techniques, deep learning knowledge and experience</p> <p>Capable of managing large data sets and developing statistical models</p> </td> </tr> </table>	Education Level / Degree:	Master degree	Field / specialty:	Computer science, electrical engineering, telecommunications, or applied mathematics	Technologies:	<p>A very good background current technology landscape 5G, LTE (Rel 10-14), SDN/MEC/NFV, IoT</p> <p>Strong Machine Learning, data mining techniques, deep learning knowledge and experience</p> <p>Capable of managing large data sets and developing statistical models</p>
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EURECOM specifically encourages women to apply with a view towards increasing the proportion of female researchers.



- Language / Systems: **Past experience in C and python programming
Knowledgeable in Linux**
- Other skills / specialties: **Good analytical and performance analysis skills**
- Other important elements: **Strong communication skills and keen to operate in a multidisciplinary team**
Demonstrate an excellent level of spoken and written English.

Application

The application must include (I, II and III):

- A curriculum vitae, with full contact information, education, positions and academic work.
- A cover letter explaining the candidate's background (relevant publications), qualifications and research interests.
- Copies of relevant diplomas / degree certificates, transcripts of records, copies 2-3 recommendation letters.

Applications should be submitted by e-mail to navid.nikaein@eurecom.fr, with the reference : CS_NN_PHD1_H2020_052017

Postal address CS 50193 - 06904 Sophia Antipolis, France

Contact secretariat@eurecom.fr

Fax number +33 4 93 00 82 00

EURECOM is a French graduate school and a research center in digital sciences 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, ST Microelectronics, 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.

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