EURECOM
Sophia Antipolis

2 PhD Positions (M/F):
Distributed Optimization and Machine Learning
for 6G Virtualized Wireless Networks

(Ref: CS_TS_PhD_SEMANTIC_Mar2020)

Research Topics	**6G, Network Slicing, Network Management, Distributed Optimization, AI, Traffic Steering, CloudRAN**
Department	Communication Systems
Web Site	http://www.eurecom.fr/cm/
Starting Date	2nd quarter 2020
Duration	Duration of the thesis
Description	**2 PhD positions** are available that lie on the intersection between **state-of-the-art 5G+/6G** cellular technologies (network virtualization, softwarization, edge clouds), **distributed machine learning and optimization** (federated learning, SGD over networks), and **modern network theory** (spectral graph theory, stochastic network modeling, etc.). The specific targeted applications include end-to-end resource allocation and traffic steering in multi-tenant environments in 6G, and joint optimization of communication, computation, and storage resources in edge cloud assisted cellular networks (C-RAN, MEC, etc.).
Hosting Institute	EURECOM is an elite French graduate school and research center conducting high quality research in the areas of Communication Systems, Data Science, and Digital Security. According to the SCOPUS SciVal research publication index (https://www.scival.com/home), EURECOM is in the **top 3 institutes in Europe with comparable publication numbers (impact/per faculty) to MIT**. Additional distinctions include **3 prestigious ERC grants** (among only 20+ faculty members), and a **world-renowned open source 5G experimentation platform (OpenAirInterface)**. EURECOM is situated in new Campus SophiaTech in Sophia Antipolis (between Nice and Cannes), Europe's leading international science park, in close proximity with a large number of research units of leading multi-national corporations in the telecommunications, semiconductor and biotechnology sectors, as well as other outstanding research and teaching institutions. A freethinking, multinational population and the unique geographic location provide a quality of life without equal. The advisor for these theses is Prof. Thrasyvoulos Spyropoulos: http://www.eurecom.fr/~spyropou/
Funding	The position is funded by an EU 2020 Marie-Curie ETN (External Training Network) grant (project "SEMANTIC") at the Communication Systems department at EURECOM, Sophia-Antipolis. Marie-Curie ETN PhD positions ("ESR"), are **prestigious positions that are well remunerated.** The fellowship will consist of a *competitive salary* of € 4OK+ (before taxes) per year, with country correction factor that depends on the cost of living in different EU Member States, plus an *additional allowance* in case of family obligations, and an *allocation for research and training costs*. Marie-Curie ETN positions also allow the PhD candidate to perform **a sabbatical with another project partner (academic or industrial).** More details here: https://cordis.europa.eu/project/id/861165?WT.mc_id=RSS-Feed&WT.rss_f=project&WT.rss_a=225113&WT.rss_ev=a

| **Requirements** | We are looking for candidates who are self-motivated and would like to conduct high quality research, and publish in top venues. Candidates should have a Master's Degree (or equivalent) in Electrical Engineering, Computer Science, or a closely related area. They are expected to have good mathematical background (Probability Theory, Linear Algebra, Optimization). Some background in the area of Wireless Networking and/or Machine Learning will be well appreciated. Some experience in programming (Matlab, Python, or other) and good level of written and spoken English is mandatory (knowledge of French is not required). In addition to these requirements, formal requirements of ETN projects include: (i) Be in the first four years (fulltime equivalent research experience) of their research careers; (ii) Be of any nationality, but not having resided or carried out their main activity in France for more than 1 year in the past 3 years; (iii) Have a degree that gives access to a PhD program in their country; |

| **Application** | The position is available immediately, and the selected candidate will be expected to join by the end of 2020 (earlier dates are preferred). Application evaluation will start immediately and will continue until position is filled. Interested individuals should submit: |

- 1-2 page summary of research interests.
- Detailed CV including publications.
- At least 2 recommendation letters.
- Transcript of courses taken at graduate and undergraduate levels and their grades.

Applications process is the following:

1) Submit the above material by email to: secretariat@eurecom.fr, spyropou@eurecom.fr mentioning the following reference in the title:

[CS_TS_PhD_SEMANTIC_Mar2020]

2) Apply also via the general project website : https://jobapp.semantic2020.eu

| **Contact** | If you have questions or need more information about the position, we encourage you to contact us directly: http://www.eurecom.fr/~spyropou/ |

| **Postal Address** | EURECOM, Campus SophiaTech, 450 route des Chappes, 06410 BIOT, France |

| **Web page** | http://www.eurecom.fr/en/eurecom/eurecom-recrute |

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 Paris, Aalto University (Helsinki), Politecnico di Torino, Technische Universität München (TUM), Norwegian University of Science and Technology (NTNU), Chalmers University (Sweden), Czech Technical University in Prague (CTU) and Technische Universität Wien (TU Wien). 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, 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

EURECOM, dans le cadre de son plan d'égalité hommes/femmes et de ses actions positives en faveur de la mixité des emplois, encourage particulièrement les candidatures féminines pour les postes d'ingénieurs et de chercheurs.