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## 2 PhD Positions: Distributed Optimization and Machine Learning for 6G Virtualized Wireless Networks

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<b>Research Topics</b>	<b>6G, Network Slicing, Network Management, Distributed Optimization, AI, Traffic Steering, CloudRAN</b>
<b>Department</b>	Communication Systems
<b>Web Site</b>	<a href="http://www.eurecom.fr/cm/">http://www.eurecom.fr/cm/</a>
<b>Starting Date</b>	2nd quarter 2020
<b>Duration</b>	36 months
<b>Description</b>	<b>2 PhD positions</b> are available that lie on the intersection between <b>state-of-the-art 5G+/6G</b> cellular technologies (network virtualization, softwarization, edge clouds), <b>distributed machine learning and optimization</b> (federated learning, SGD over networks), and <b>modern network theory</b> (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.).
<b>Hosting Institute</b>	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 ( <a href="https://www.scival.com/home">https://www.scival.com/home</a> ), EURECOM is in the <b>top 3 institutes in Europe with comparable publication numbers (impact/per faculty) to MIT</b> . Additional distinctions include <b>3 prestigious ERC grants</b> (among only 20+ faculty members), and a <b>world-renowned open source 5G experimentation platform (OpenAirInterface)</b> . 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 multinational 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. Thrasylvoulos Spyropoulos: <a href="http://www.eurecom.fr/~spyropou/">http://www.eurecom.fr/~spyropou/</a>
<b>Funding</b>	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 <b>prestigious positions that are well remunerated</b> . The fellowship will consist of a <i>*competitive salary*</i> of € 40K+ (before taxes) per year, with country correction factor that depends on the cost of living in different EU Member States, plus an <i>*additional allowance*</i> in case of family obligations, and an <i>*allocation for research and training costs*</i> . Marie-Curie ETN positions also allow the PhD candidate to perform <b>a sabbatical with another project partner (academic or industrial)</b> . More details here: <a href="https://cordis.europa.eu/project/id/861165?WT.mc_id=RSS-Feed&amp;WT.rss_f=project&amp;WT.rss_a=225113&amp;WT.rss_ev=a">https://cordis.europa.eu/project/id/861165?WT.mc_id=RSS-Feed&amp;WT.rss_f=project&amp;WT.rss_a=225113&amp;WT.rss_ev=a</a>
<b>Requirements</b>	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 as between Mar 2020 and September 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](mailto:secretariat@eurecom.fr), [spyropou@eurecom.fr](mailto:spyropou@eurecom.fr) mentioning the following reference in the title:

### [SEMANTIC PhD Position]

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 est une école d'ingénieurs et un centre de recherche en systèmes de communication, située au cœur de la technopole internationale de Sophia Antipolis. Fondé en 1991 par TELECOM ParisTech (Ecole Nationale Supérieure des Télécommunications) et l'E.P.F.L. (Ecole Polytechnique Fédérale de Lausanne) EURECOM est un groupement d'intérêt économique (GIE) qui associe partenaires académiques et industriels internationaux<sup>1</sup>.*

*Les activités d'enseignement et de recherche d'EURECOM sont organisées autour des trois grands domaines de spécialisation: Réseaux et sécurité, communications multimédia, communications mobiles. EURECOM se caractérise par une vocation et une stratégie internationale affirmées.*

*EURECOM est particulièrement actif en recherche dans ses domaines d'excellence et forme un grand nombre de doctorants. Sa recherche contractuelle, à laquelle participe activement ses membres industriels, est largement reconnue en Europe et contribue pour une large part à son budget.*

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<sup>1</sup> Partenaires académiques : TELECOM ParisTech, EPFL, Politecnico di Torino, Helsinki University of Technology, Technische Universität München, Norwegian University of Science and Technology, Vietnam National University, Ho chi Minh ville) –

Partenaires industriels : Swisscom, Orange, SFR, ST Ericsson, CISCO, BMW Group research & technology, SAP, Monaco Telecom, Symantec