2018-00892 - PhD thesis - Design of mobile data analytics and applications to virtualised mobile networks

Contract type: Public service fixed-term contract  
Level of qualifications required: Graduate degree or equivalent  
Fonction: PhD Position

About the research centre or Inria department

Grenoble Rhône-Alpes Research Center groups together a few less than 800 people in 35 research teams and 9 research support departments.

Staff is localized on 5 campuses in Grenoble and Lyon, in close collaboration with labs, research and higher education institutions in Grenoble and Lyon, but also with the economic players in these areas.

Present in the fields of software, high-performance computing, Internet of things, image and data, but also in oceanography and biology, it participates at the highest level of international scientific achievements and collaborations in both Europe and the rest of the world.

Context

The position is funded by the ANR CANCANC project and will take place in the Inria Agora team, located on the La Doua campus and part of the CITI laboratory. The partners of the ANR CANCANC project are Inria, Thales, Orange Labs and Université Pierre et Marie Curie.

The recruited candidate will integrate INSA Lyon and the InfoMaths Doctoral Studies School as a PhD candidate.

Frequent travelling (several weeks per year) at the Orange Labs premises in Paris is foreseen for this job, allowing the candidate to work on privacy-sensitive data collected by the operator. A longer visit (a few months) is foreseen, at the CNR IEIIT laboratory in Turin, Italy.

Assignment

The recruited candidate is expected to conduct research in the field of mobile networks. More precisely, the candidate will design and implement original algorithms for the analysis of mobile network data, using supervised, unsupervised and relational machine learning, as well as advanced network science tools.

The candidate will apply these algorithms to solve different problems created by the evolution and virtualization of mobile networks, such as the predictive and differentiated radio scheduling for network slicing, the management of resources in mobile edge computing or the on-line generation of service level agreements and dynamic classes of service.

The recruited candidate will collaborate with researchers from Orange Labs, as well as with collaborators from the Italian National Research Institute in Turin.

Main activities

Main activities:

- Develop algorithmic tools for the analysis of mobile data collected by mobile operators. 
- Propose and implement predictive mechanisms for virtualised mobile networks. 
- Write documentation and scientific reports. 
- Present the research advancement to the project partners.

Skills

The recruited candidate must have a Master-level degree in computer networks, data science or a related field. The candidate is expected to have a detailed understanding of the functioning of a mobile network. He/She must have prior experience with data processing and experience, either in school projects or during an internship. The PhD thesis will take place in an international environment and will require collaborations with international researchers; English and communication skills are fundamental pre-requisites for this position.

Benefits package

- Subsidised catering service 
- Partially-reimbursed public transport 
- Social security 
- Paid leave 
- Flexible working hours 
- Sports facilities

Remuneration

Gross income: 1982€ the 1st and 2nd year; 2085€ the 3rd year.