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
Function : 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 simulation in oceanography and biology, it participates at the best 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 IEIF 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 prerequisites 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.

General Information
- Theme/Domain : Networks and Telecommunications
- System & Networks (BAP E)
- Town/city : Lyon
- Inria Center : CRI Grenoble - Rhône-Alpes
- Starting date : 2018-10-01
- Duration of contract : 3 years
- Deadline to apply : 2018-08-31

Contacts
- Inria Team : AGORA
- Recruiter : Stanica Razvan / razvan.stanica@inria.fr

About Inria
Inria, the French National Institute for computer science and applied mathematics, promotes "scientific excellence for technology transfer and society". Graduates from the world’s top universities, Inria’s 2,700 employees rise to the challenges of digital sciences. With its open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. Inria is the source of many innovations that add value and create jobs.

The keys to success
The recruited candidate should have a demonstrated interest in research. Reading scientific and technical papers and discussing them are essential qualities to succeed in this job.

Conditions for application
Defence Security :
This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :
As part of its diversity policy, all Inria positions are accessible to people with disabilities.

Warning : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.