

The Smart Energy Efficient Communication Technologies (SMARTECH) Department of the Telecommunications Technological Centre of Catalonia (CTTC) is looking for a potential PhD candidate to be funded by the IQUADRAT Informàtica S.L under an Industrial PhD Program.

We address (pre-PhD) researchers with an MSc, aiming at significantly improving their career perspectives from both the PUBLIC and PRIVATE sector.

The duration of the appointment is 3 years. Applicants will be enrolled in the PhD program of the Technical University of Catalonia (UPC) or the Barcelona University (UB).

### **RESEARCH TOPIC:**

The PhD candidate will conduct research on 5th generation (5G) wireless networks. In particular, the proposed PhD project will exploit promising technologies, such as “*multi-tenant networks*”, “*multi-tier user association*”, “*programmable protocols*”, “*Device-to-Device connectivity*”, “*network virtualization*”, “*resource and infrastructure sharing*” and “*edge-cloud capabilities*” to provide new networking topologies in the context of the 5G paradigm. In particular, the specific objectives include:

- Investigation of architectures and mechanisms for efficient resource and spectrum sharing in dense 5G networks;
- Investigation of multi-tenancy solutions considering both communication and edge-cloud techniques to improve the network utilization and capacity and support a higher amount of tenants;
- Investigation of novel congestion control mechanisms to handle traffic peaks in the networks and provide efficient network utilization.

Junior researchers with an MSc degree in telecommunications, electrical engineering, computer science, or related fields, and capacity of carrying out innovative research, are highly encouraged to apply for this position.

The candidate must have strong analytical skills and experience in wireless networking, specifically in network protocols. Applicants should also have a solid background in some of the following fields: wireless networking, game theory, stochastic processes, stochastic geometry etc. Knowledge on simulation environments such as MATLAB and C/C++ is required. Fluency in English (spoken and written), proactive communication skills and problem solving as part of a team are also essential characteristics for this position.

### **ELIGIBLY**

- The recruited researcher should not hold a PhD and should have the qualifications to embark on a PhD program.
- The recruited researcher should be able to get a residence permit in Spain.

- The recruited researcher should not have resided in Spain for more than 12 months during the last 3 years.

- The candidate must have an average mark of at least 7/10 (or equivalent) on their academic transcript.

### **FINANCIAL PROVISIONS**

Gross salary in the range of 30.000 - 32.000€ will be paid by the Industrial Partner (IQUADRAT Informática S.L)

### **HOW TO APPLY**

1. Please send your applications to Christos Verikoukis ([cveri@cttc.es](mailto:cveri@cttc.es)). The application should include:

- A cover letter detailing the applicant's suitability for the position
- A detailed CV
- A copy of the academic records (transcripts) of the undergraduate degree

### **CONTACT FOR INFORMAL ENQUIRIES**

Informal email enquiries can be made to Christos Verikoukis ([cveri@cttc.es](mailto:cveri@cttc.es))

For further information on CTTC please visit [www.cttc.es](http://www.cttc.es)