

CALL FOR RESEARCH POSITION

5GSDN/BIM/01/18

The CISTER Research Unit hosted at the School of Engineering of Porto (ISEP), is opening 1 BIM research position, with ref. 5GSDN/BIM/01/18, in the area of Electrical and Computer Engineering or Telecommunications Networks. The work is to be developed under project 5GSDN, ref. POCI-01-0145-FEDER-032218, supported by National Funds through the FCT/MCTES Portuguese Foundation for Science and Technology and co-financed by the Operational Competitiveness Programme and Internationalization (COMPETE 2020) under the PT2020 Partnership Agreement, through the European Regional Development Fund (ERDF), in the following conditions:

1. SCIENTIFIC AREA

Electronic and Computer Engineering or Telecommunications Networks Engineering

2. REQUIREMENTS

The candidate must hold a Master's degree in Electrical and Computer Engineering or Telecommunications Networks Engineering and must fulfil the following list of requirements:

- hold a Master degree with specific focus on Wireless Sensor Networks
- excellent analytical and mathematical skills
- proven knowledge in telecommunication network design and RF hardware design
- proven knowledge in wireless sensor networks and software defined radio
- be fluent in English, both written and spoken

The candidate should also preferably demonstrate:

- solid knowledge in the topics of embedded real-time systems, cyber-security, hardware programming, RFID technology, design of DF amplifiers, network topologies and management tools, and network simulation tools
- a track record of scientific publications in the areas of Computer Networks and Telecommunications
- interest in pursuing PhD studies in the area of real-time embedded computing systems

3. CONTRACT DURATION

The position is of 6 months, possibly renewable, up to the limits stated in the regulation.

4. WORK PLAN

5G is regarded as one of the main enablers of highly critical industrial applications of the Internet of things (IoT). The objective is to support machine-type traffic with real-time, high data-rate, highly scalable, and ultra-low latency requirements. 5G will enable a set of remotely controlled embedded applications with high criticality requirements. New industrial services will be offered over wider geographical areas at lower costs and with more flexible infrastructure. This will boost economic development in our society. The project 5GSDN addresses the cross-layer design of 5G (fifth generation) industrial cyber-physical wireless networks using software defined radios (SDR). 5GSDN will look into the design of ultra-low latency and highly scalable transmission technologies for industrial applications of the IoT.

The project will cover aspects of channel propagation, RF design, computer engineering network analysis and simulation, IoT support, signal processing for massive MIMO, resource allocation, system-level evaluation, and SDN (software defined radio) implementation. Multi-objective optimization tools are planned to target multiple metrics and stakeholders involved in 5G systems. Semi-blind signal processing and conflict resolution is also one of the main topics of this project as a means to reduce the amount of training sequences and feedback requirements, thus improving resource utilization of highly dense object IoT networks. Autonomous driving and structure health monitoring applications are considered as examples of the implementation of 5G technology.

P. PORTO

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Remarks:

Candidates may be excluded from the call for the following reasons:

- a) For not holding the required academic degree and requirements (see 2. REQUIREMENTS);
- b) For getting a score lower than 9.5 (out of 20) in any of the assessment criteria stages;
- c) For not attending the interview or unavailability to provide any additional information required by the Jury during the selection process.

9. FORM OF PUBLICATION / NOTIFICATION OF RESULTS

The evaluation results will be disseminated electronically (by email).

10. DEADLINE / APPLICATION PROCEDURE

The interested candidates should submit the application between **20/DEC/2018** to **4/JAN/2019**.

The application must include a **detailed CV, and transcripts**, and should be addressed to the email jobs@cister-labs.pt, until **4/JAN/2019**. Indicate “**ref. 5GSDN/BIM/01/18**” as email subject.

11. RESERVE LIST

CISTER/ISEP reserves the right to consider the non-selected applicants, always according to the final ranking list, for hiring a fellow for the same project in case the initially selected candidate abdicates from the position.

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