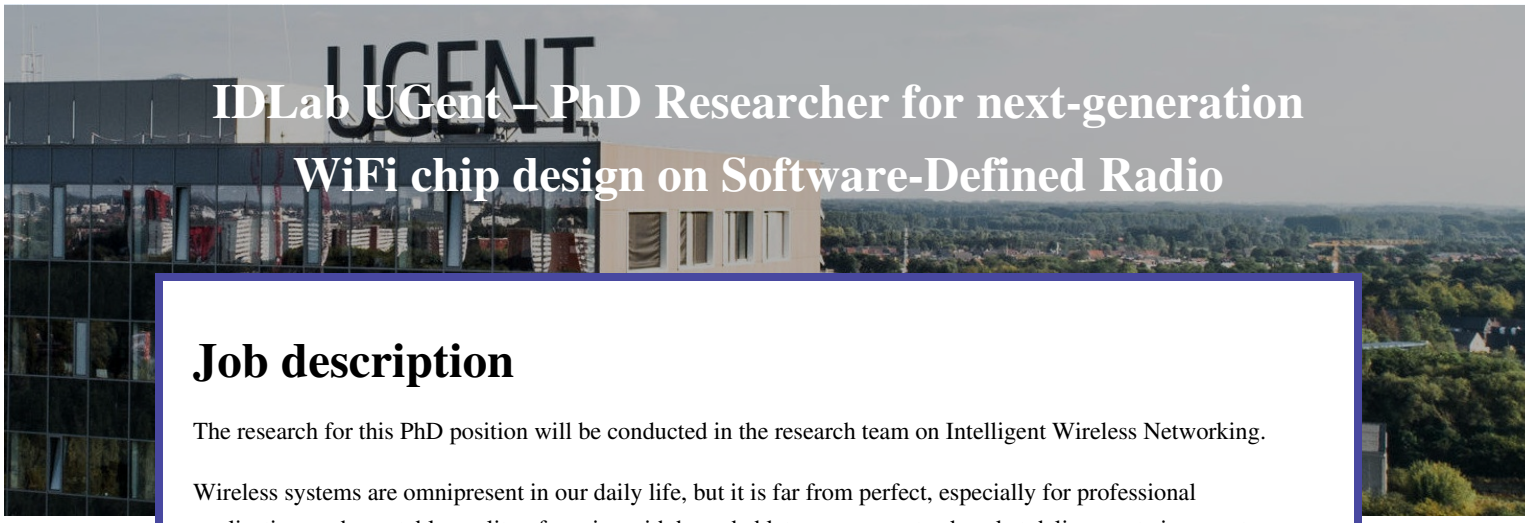
IDLab
INTERNET & DATA LAB



IDLab UGent – PhD Researcher for next-generation WiFi chip design on Software-Defined Radio

Job description

The research for this PhD position will be conducted in the research team on Intelligent Wireless Networking.

Wireless systems are omnipresent in our daily life, but it is far from perfect, especially for professional applications, where stable quality of service with bounded latency, guaranteed packet delivery rate is a must. Today, we still see Wi-Fi coverage is far from uniform, high variations of the Wi-Fi signal strength can be observed at different locations. Co-located Wi-Fi access points sharing the same spectrum compete against each other rather than collaborate to serve users. In this PhD position, you will research solutions to tackle these issues and improve wireless performance and efficiency together with the members of Software-Defined Radio team in IDLab.

- You will enhance WiFi design in view of distributed MIMO, and/or coordinated multi-AP operation (under study in the Wi-Fi 8 standardisation workgroup), using Hardware Description Language on FPGA, based on the open-source openwifi project (https://github.com/open-sdr/openwifi).
- You are also encouraged to design higher networking layer functionality and driver in Linux environment, to fully exploit the distributed MIMO and coordinated multi-AP feature.
- You publish and present results both at international conferences and in scientific journals.
- You will combine theoretical design with experimental proof-of-concept validation by setting up prototyping environments in our test lab considering concrete professional use cases (industry 4.0, mission-critical applications, professional multimedia applications, etc.)
- You will participate in the framework of national and European research projects, and collaborate on a technical level with research partners from industry.
- You will assist in limited educational tasks of the research group.
- This research will lead to a PhD degree. Throughout the complete PhD period, you receive a full-time, attractive salary.

Your profile

We are looking for candidates with the following qualifications and skills.

- You must have (or will receive in a few months) a Master's degree in Computer Science Engineering, Master of Science in Information Engineering Technology, Master of Science in Computer Science, Master of Electrical Engineering, Master in Telecommunication, or a related field.
- You are interested to do research in an academic environment for a 4 years period in view of a PhD degree.
- You have the necessary theoretical background for MIMO related research, and have attended courses such as Information Theory, Signal and Systems, Modulation and Detection.
- Experience with OFDM or single carrier baseband algorithms (either in classes or in projects/work) is a must.
- You have experience or you have studied at least one Hardware Description Language.

- You must be familiar with FPGA programming, hands on experience with Vivado is a plus.
- Knowledge of C and C++ is a plus
- Knowledge of Wi-Fi standards, especially regarding MIMO or OFDMA is a plus
- Your English is fluent, both speaking and writing.

Our offer

- We offer a full-time position as a doctoral fellow, consisting of an initial period of 12 months, which - after a positive evaluation, will be extended to a total maximum of 48 months.
- The fellowship amount is 100% of the net salary of an AAP member in equal family circumstances. The individual fellowship amount is determined by the Department of Personnel and Organization based on family status and seniority. A grant that meets the conditions and criteria of the regulations for doctoral fellowships is considered free of personal income tax. Click here for more information about our salary scales
- All Ghent University staff members enjoy a number of benefits, such as a wide range of training and education opportunities, 36 days of holiday leave (on an annual basis for a full-time job) supplemented by annual fixed bridge days, bicycle allowance and eco vouchers. Click here for a complete overview of all the staff benefits (in Dutch).

Interested?

For further information, please contact Prof. Ingrid Moerman (Ingrid.moerman@ugent.be), dr. Xianjun Jiao (xianjun.jiao@ugent.be) and/or dr. Wei Liu (wei.liu@ugent.be).

How to apply?

You can apply online via this application form.

Applicants should bundle the following

- Personal letter where you introduce yourself, your experience relevant to the position and motivation to apply for this position
- Curriculum Vitae
- Two reference contacts
- Copy of your diploma (if already in your possession)

Selected candidates will be contacted for an interview (remote interview possible for international applicants).

https://idlab.ugent.be