

Vacancy: PhD position in Machine Learning for the Design of High-Frequency Circuits and Systems

IDLab, Ghent University – imec

IDLab is a core research group of imec, a world-leading research and innovation hub in nanoelectronics and digital technologies, with research activities embedded in Ghent University. IDLab performs fundamental and applied research on data science and internet technology, and is, with over 300 researchers, one of the larger research groups at imec. Our major research areas are machine learning and data mining; semantic intelligence; multimedia processing; distributed intelligence for IoT; cloud and big data infrastructures; wireless and fixed networking; electromagnetics, RF and high-speed circuits and systems.

Job description

The goal of the PhD research is to develop state-of-the-art Machine Learning (ML) algorithms for various Electrical Engineering (EE) applications. In the proposed framework, machine learning algorithms will be integrated into the design flow of modern electromagnetic and electronics circuits, aiding designers in several activities such as uncertainty quantification, optimization and EMC/SI analysis. The proposed PhD research is defined within the context of several national and international research projects. The successful candidate will cooperate with enthusiastic colleagues and diverse external partners to fulfill the project requirements, while staying up to date with important changes in the related literature.

Your profile

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

- You have (or will obtain in the next months) a master degree in Computer Science, Electronics-ICT, Informatics (Mathematical), or equivalent, with excellent ('honors'-level) grades.
- You are interested in and motivated by the research topic, as well as in obtaining a PhD degree.
- You have an open mind and a multi-disciplinary attitude.
- You have a strong interest in machine learning, and are eager to advance the state of the art. Experience with machine learning algorithmic approaches or frameworks (such as PyTorch and Tensorflow) is considered a plus.
- You have a strong interest in the design of complex electromagnetic and electronics systems. Experience with CAD tools (such as Advanced Design Systems or CST studio suite) is considered a plus.
- You have excellent analytical skills to interpret the obtained research results.
- You are a team player and have strong communication skills.
- Your English is fluent, both speaking and writing.

Our offer

We offer the opportunity to do full-time research in an international (with over 17 nationalities at IDLab, part of imec and Ghent University) and friendly working environment, with a competitive salary at Ghent University. While grounded in fundamental academic research, as a PhD candidate you will also participate in collaborative research with industrial and/or academic partners in Flanders and/or on a wider geographic scale (e.g., EU H2020 projects), in the framework of new/ongoing projects. Furthermore, you will publish your research results at major international conferences and in journal papers, as part of meeting the requirements for your PhD. This PhD position is available starting winter 2020.

Interested?

Send your application by email or any questions concerning this vacancy to prof. Tom Dhaene (tom.dhaene@ugent.be) and dr. Domenico Spina (domenico.spina@ugent.be), indicating "Job Application: ML-based design for EE" in the subject. Applications should include (1) an academic/professional resume, (2) a personal motivation letter, and (3) transcripts of study results, and (4) at least two reference contacts. After a first screening, selected candidates will be invited for an interview (also possible via Skype) as a first contact in a multi-stage selection process.

- Application deadline: 10/12/2020 or until the vacancy is filled.
- Type of contract: Full-time
- Employment: Temporary (4 years), with yearly progress evaluation
- Starting date: Winter 2020