**ENAC - PhD Student in Intelligent Thermal Energy Networks**

The Intelligent Maintenance and Operations Systems (IMOS) Lab at EPFL is looking for a motivated and out-of-the-box thinking PhD researcher, 100 % Lausanne, fixed-term, starting as soon as possible or upon agreement.

**PROJECT DESCRIPTION**

The main objective of the PhD project is to develop a procedure for the metrological validation or approval of digital methods for maintaining measurement stability in thermal energy networks in real time. This will require on the one hand to develop machine learning methods that are able to detect measurement drifts in thermal energy networks (Physics-Informed Graph Neural Networks) and on the other hand to validate the suitability of the proposed methodology on real data and on laboratory setups.

The PhD thesis will be embedded in the project led jointly with Federal Institute of Metrology (METAS) and will also involve a collaboration with the Smart Water Infrastructures Laboratory (SWIL) at Aalborg University, Denmark.

**WORK ENVIRONMENT**

EPFL is one of the most dynamic university campuses in Europe and ranks among the top 20 universities worldwide and offers an exceptional working environment with very competitive salaries. The IMOS Lab offers a highly motivating, interdisciplinary scientific environment with many opportunities to interact between different projects and researchers, and has an excellent network of collaborations with industrial stakeholders and other international universities.

**CANDIDATE PROFILE**

We are looking for a PhD candidate with a strong analytical background, and an outstanding MSc degree in Engineering, Computer Science, Physics, Applied Mathematics, or a related field. You should be proficient in machine learning, deep learning, geometric deep learning, signal processing, statistics and learning theory. We expect the candidate to be-self-driven with strong problem solving abilities and out-of-the-box thinking. Professional command of English (both written and spoken) is mandatory.

**APPLICATION PROCESS**

Formal applications including

* letter of motivation,
* CV of the candidate,
* brief research statement (one page) describing your project idea in the field of physics-informed deep learning algorithms, making connection to your experience in this area and the related work from the literature,
* transcripts of all obtained degrees (in English)
* one publication (e.g. thesis or preferably a conference or journal publication, providing a link to the publication is sufficient)

should be sent via email (as a single pdf file) at [christine.gabriel@epfl.ch](mailto:christine.gabriel@epfl.ch) before **31.08.2022**. Questions on the content of the position can be directed to Prof. Olga Fink [olga.fink@epfl.ch](mailto:olga.fink@epfl.ch) (no applications).

Shortlisted candidates will be invited to apply to one of the [EPFL doctoral schools](https://www.epfl.ch/education/phd/programs/) (e.g. [EDCE](https://www.epfl.ch/education/phd/programs/edce-civil-and-environmental-engineering-2/), EDEE or EDRS). This parallel application process is necessary to be eligible for a PhD at EPFL.