



Internship in Physics Informed Machine Learning for Power Grids Applications (m/f/d)

At Hitachi Energy our purpose is advancing a sustainable energy future for all. We bring power to our homes, schools, hospitals and factories. Join us and work with fantastic people, while learning and developing yourself on projects that have a real impact to our communities and society. Bring your passion, bring your energy, and be part of a global team that appreciates a simple truth: Diversity + Collaboration = Great Innovation

Machine learning approaches have proven capable of approximating complex systems, provided a large amount of data is available. However, in some applications this is not readily available and the most recent trend in ML is to include physical knowledge of the system in the algorithm to partially mitigate the effect of a small data regime. Hitachi Energy has an opening for the position of Research Intern for investigating how this class of ML algorithms can be used in specific applications in the power grids domain.

The hired intern will work under the supervision of Research Scientists of Hitachi Energy Research and will be based in our research center in Baden-Dättwil, Switzerland.

Your responsibilities

Investigate the strengths and weaknesses of Machine Learning (ML) techniques in specific power grids applications. Investigate the architectures and training losses for achieving accurate estimates, and evaluate the performance of physics-embedded machine learning on simulated datasets as well as real measurements

Review academic literature

Effectively engage in an interdisciplinary team

Present findings, write technical reports and/or submit papers in peer-reviewed conference

Your background

Currently enrolled in a MSc program in Computer Engineering, Computer Science, Electrical engineering, Applied Mathematics, Computational Physics or similar field

Experience with Python

Hands-on experience with open-source ML frameworks, e.g. Tensorflow, Pytorch, Keras, Numpy, Scipy, Sklearn

Ability to do critical and innovative thinking

Excellent communication skills (both written and spoken)

More about us

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We serve customers in the utility, industry and infrastructure sectors with innovative solutions and services across the value chain. Together with customers and partners, we pioneer technologies and enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. We are advancing the world's energy system to become more sustainable, flexible and secure whilst balancing social, environmental and economic value. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries. Headquartered in Switzerland, we employ around 40,000 people in 90 countries and generate business volumes of approximately \$10 billion USD. www.hitachienergy.com

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