Student project proposal

Project title  ML approaches for power system event detection and classification

Project type  ☒ MSc thesis  ☐ BA semester project  ☒ MSc semester project

Project responsible and e-mail
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Project description and objectives
Phasor Measurement Units (PMUs) are advanced grid monitoring devices able to provide high-speed and time-synchronized measurements of voltage and current signals. PMU measurements are transmitted in real-time to a Phasor Data Concentrator that collect and store them and analyse them using advanced algorithms.

In this project the student is asked to develop and test Machine Learning (ML) algorithms able to detect and classify power system events/anomalies. The solution will be trained on existing PMU data sets, must be capable to automatically detect and classify power system events, receive expert user feedback, and raise intelligent alarms.

Tasks of the student
▪ Develop a ML solution to detect and classify power system events/anomalies
▪ Validate and refine the developed solution with real PMU data

Required skills
▪ Machine learning
▪ Experience with relational databases and time-series databases
▪ At least one of the following programming languages: Python, Go, C++, C#, JavaScript

Other benefits and/or compensation
Depending on the final project type, scope and deliverables, Zaphiro may consider providing additional adequate compensation.