

Probabilistic electricity demand forecast for grid operation and planning

Motivation

Probabilistic forecasts obtain probability distributions rather than point estimates. This allows more informed decisions to be made in the operation and planning of electricity grids.

Task

The work will use a real dataset from a local distribution network operator and will instantiate a variety of probabilistic forecasting methods (statistical, machine learning, deep learning methods). Evaluation will be done with technical metrics but also in economic figures (e.g., overestimates and underestimates come with different costs).

Expected results

Students are expected to hand in substantiated report. A stretch goal would be an additional short paper for a conference.

Title German

- Probabilistische Vorhersage des Strombedarfs im Netzbetrieb und der -planung

Level (Ambition: high)

- Master thesis

Methodology

- Data analysis and machine learning application with real data

Special prerequisites

- Quantitative and technical skills

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