TrønderEnergi: Explainable time-series forecasting

Problem description

TrønderEnergi has several forecasting systems utilizing machine learning methods in commercial operation. The systems are used and the forecasting is monitored by domain experts in the operating center at Berkåk. The domain experts do not have any training and knowledge in the machine learning methods, but they do have to make decision based on their output. At times the experts need to understand why a forecast has the value it has. The literature has to be reviewed, prototypes should be developed and evaluated by domain experts.

Data

There are several data sets that can be used for this including consumption, grid loss, weather forecasts, and power production data. Many of the data sets have more than five years of data.

The focus will be on data from deployed systems, so that they can be improved.

Challenges

Provide explanations to domain experts, so that they understand the forecasts.

Thesis information

The thesis could be written by one or two students (both informatics and computer science students).