MINI PROJECT CANVAS

Title (preliminary): Predicting spot-priced electricity

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Workshop # : 5

MOTIVATION

- People that have spot-priced electricity in Finland.

-Be aware when the prices are low.

-People will save money.

DATA COLLECTION

-Spot-price history and data from the Finnish Meteorological Institute.

-https://porssisahko.net/tilastot, https://www.ilmatieteenlaitos.fi/avoin-data/

-Download the data and combine them using python and save them as CSV.

PREPROCESSING

-We want the data to be in a suitable form so that it is easily accessible.

-We want to take out the outliers and remove the missing values.

-We will remove duplicate data and combine different datasets together.

-We will transform weather data from multiple different stations to a one big dataset.

-No necessary engineering.

EXPLORATORY DATA ANALYSIS (EDA)

-We will look at each dataset separately.

-We can use typical python methods that give descriptive statistics about the data.

VISUALIZATIONS

-We will produce a graph which predicts the electricity price for some time.

-We are not planning to produce any interactive visualizations but It may change.

LEARNING TASK

(focus on problem definition)

-Predicting electricity prices based on weather and spot-price history.

-We are planning to learn to use a time series mode.

-For now we have wind and temperature data but we may add some other variables later.

LEARNING APPROACH

(focus on solution implementation)

-Time-series modeling is relevant because we are predicting the future.

-We will use metrics such as mean absolute error and mean squared error.

COMMUNICATION OF RESULTS

-A website or an app would benefit the user most.

-Promoting on social media.

-Graph which predicts the upcoming electricity prices.

DATA PRIVACY AND ETHICAL CONSIDERATIONS

(if applicable)

- Not applicable.

ADDED VALUE

-Users could use the prediction to plan their electricity consumption.

LEGEND

WEEK 1: Data collection/preprocessing

WEEK 2: EDA & visualizations

WEEKS 3-4: Machine/deep learning

WEEK 5: Fairness & data privacy