Quadra Energy
Prediction of energy losses based on EinsMan

CONTENTS OF THIS TEMPLATE

01

Introduction

Introduction

Energy market:

- Energy market is a very complex market
- Predict the right amount of energy produced
- Wrong predictions cost more money

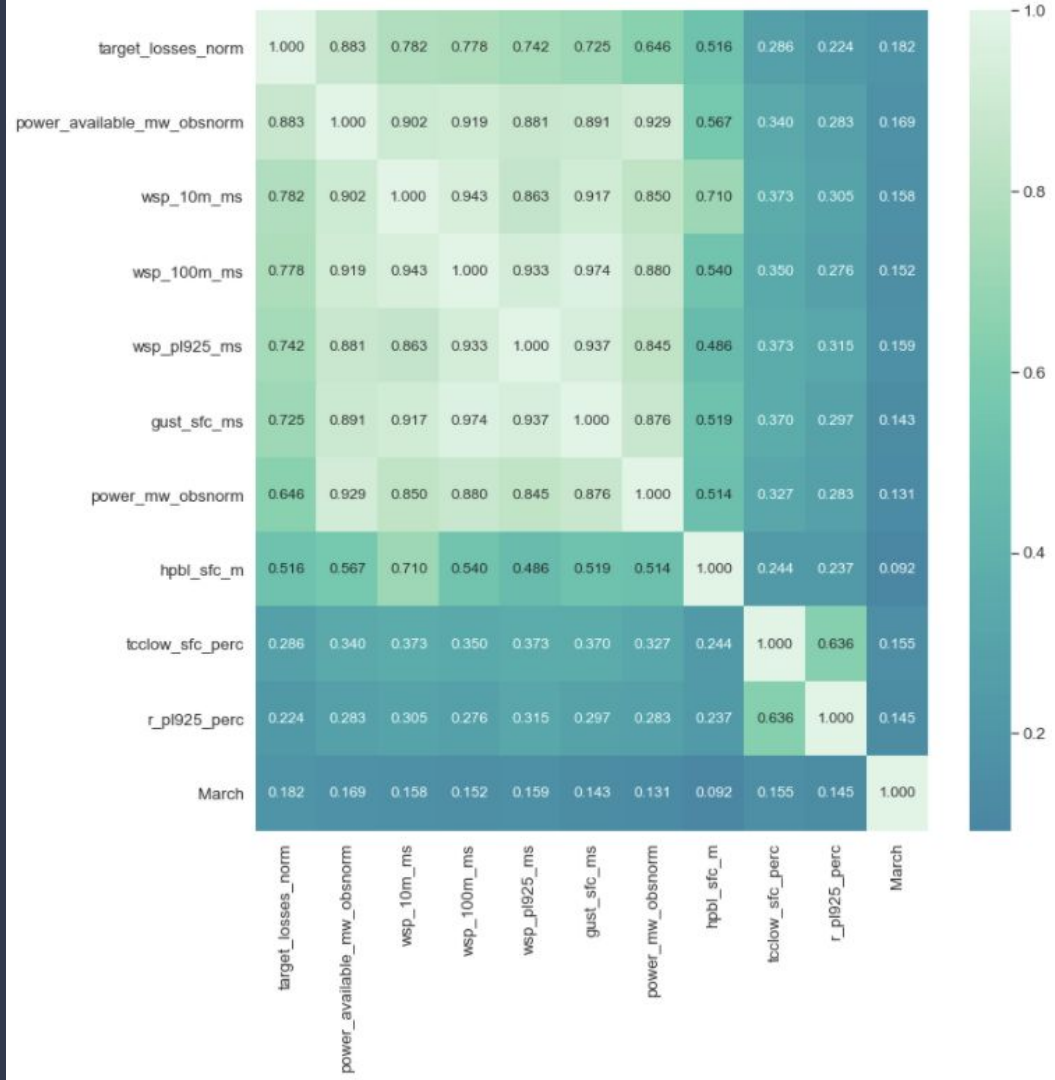
EinsMan

- Last measure to use to overcome a bottleneck
- Protect individual sections of a distribution or transmission network
- Blades of wind turbines have to be turned out of the wind

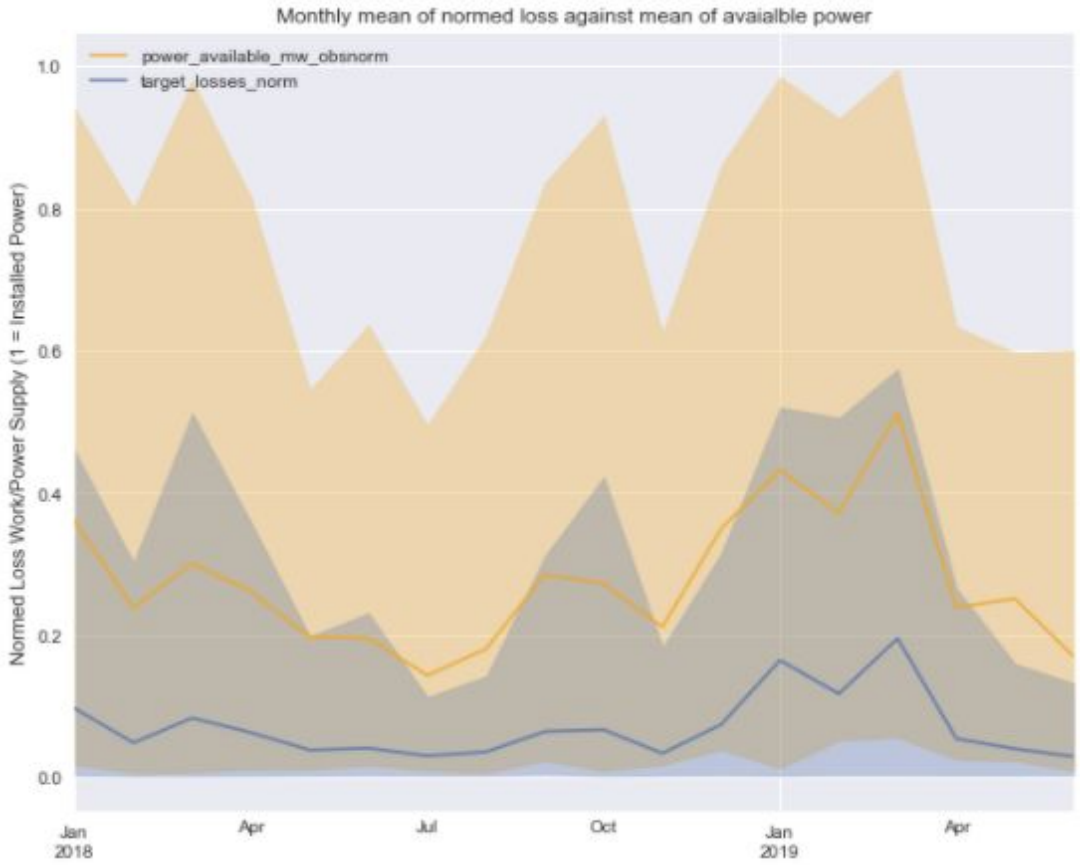
02

Exploratory Data Analysis

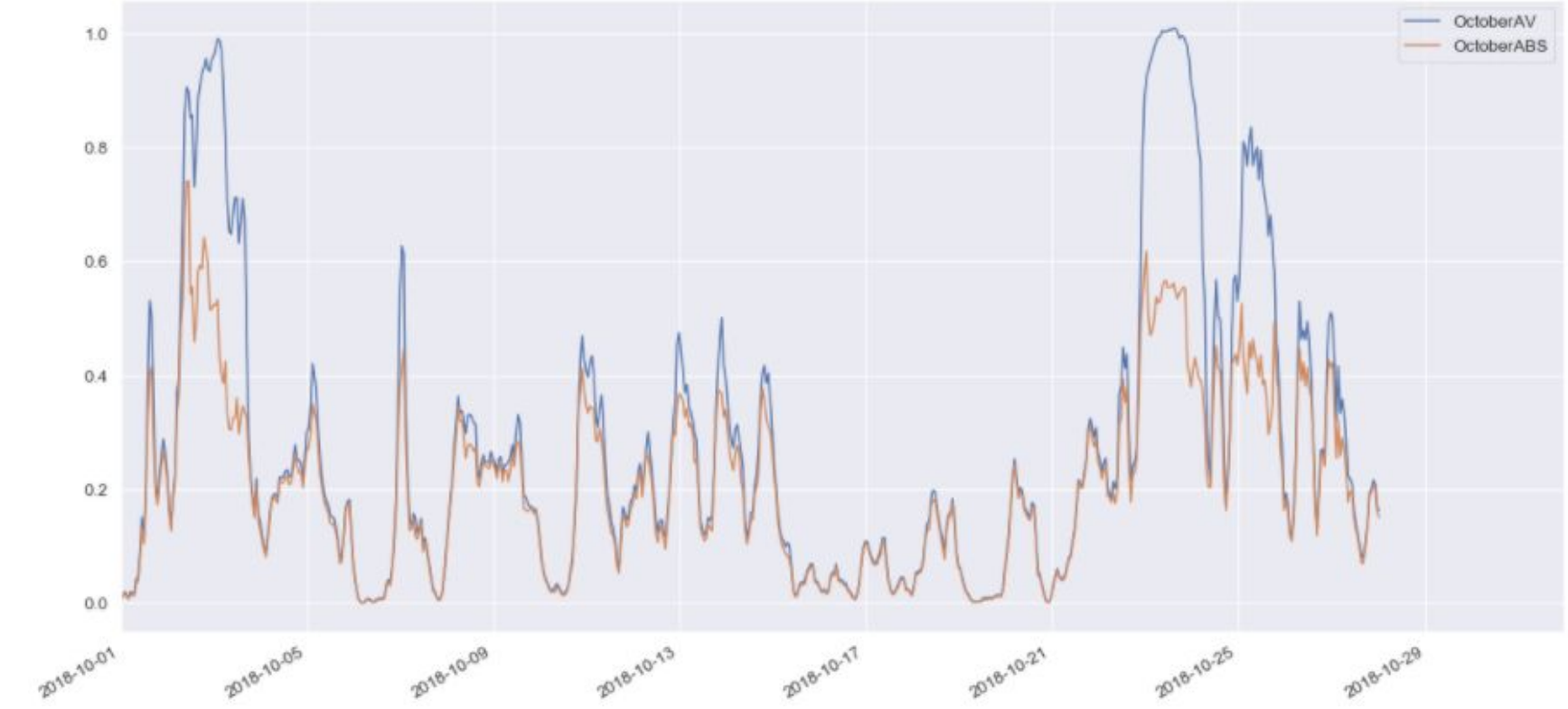
Correlation matrix for best features



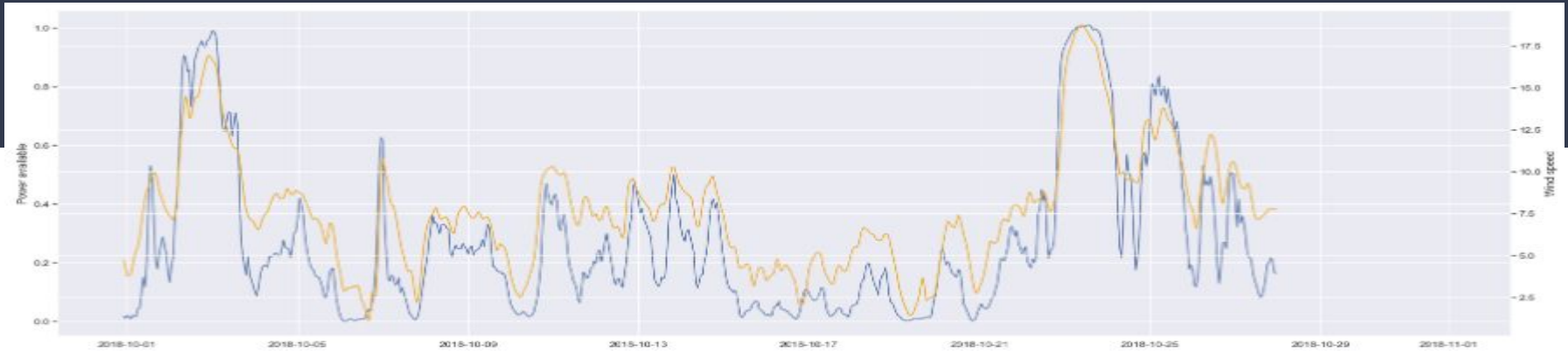
Power used vs power available - mean over month



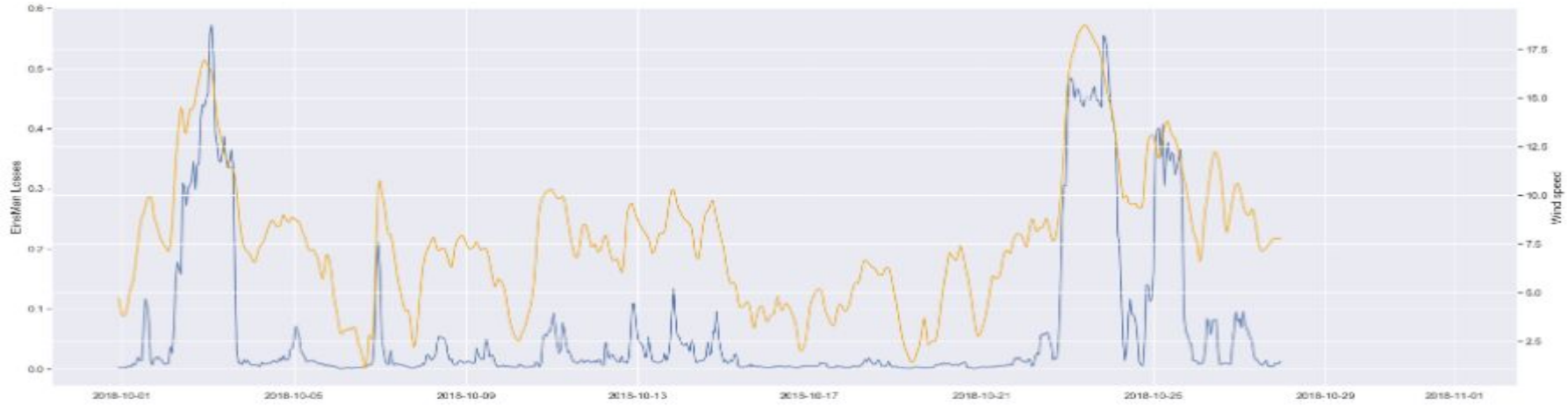
Power available vs. power used for October – mean over hours



Wind speed 100 m vs. power available in October - mean over hours



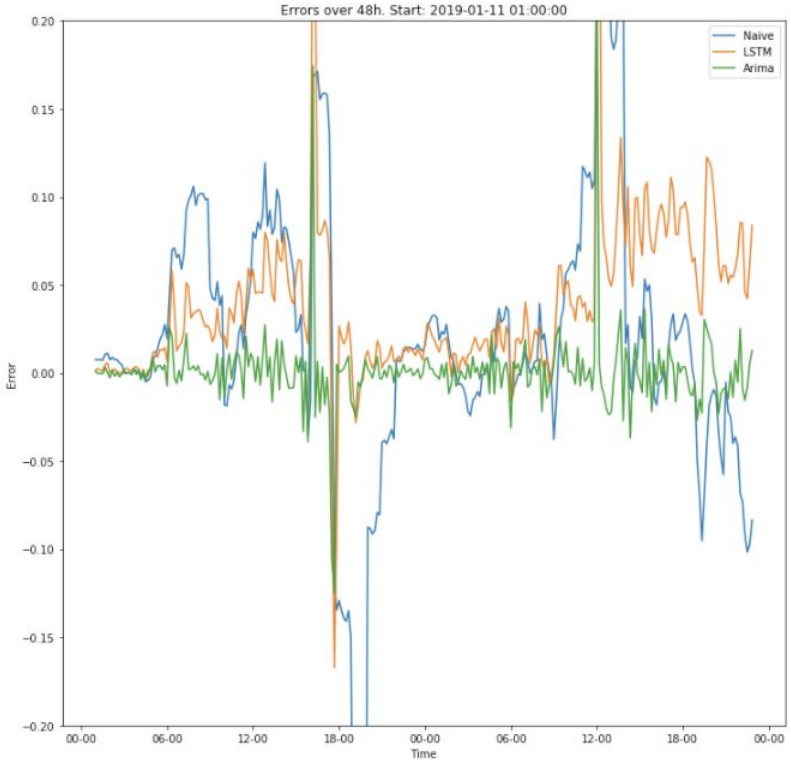
Wind speed 100m vs. target loss in October - mean over hours

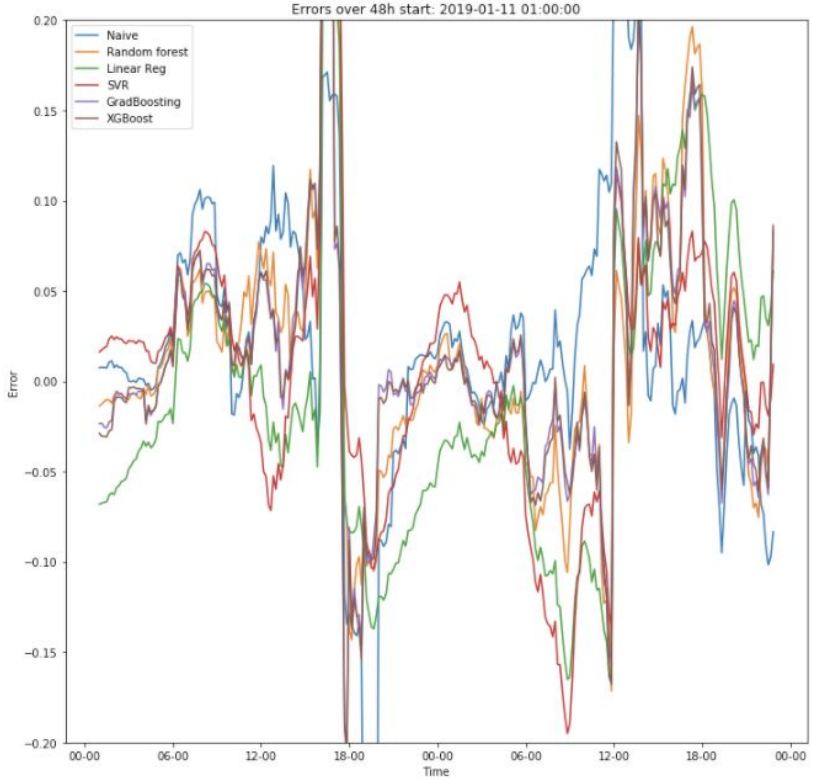


03

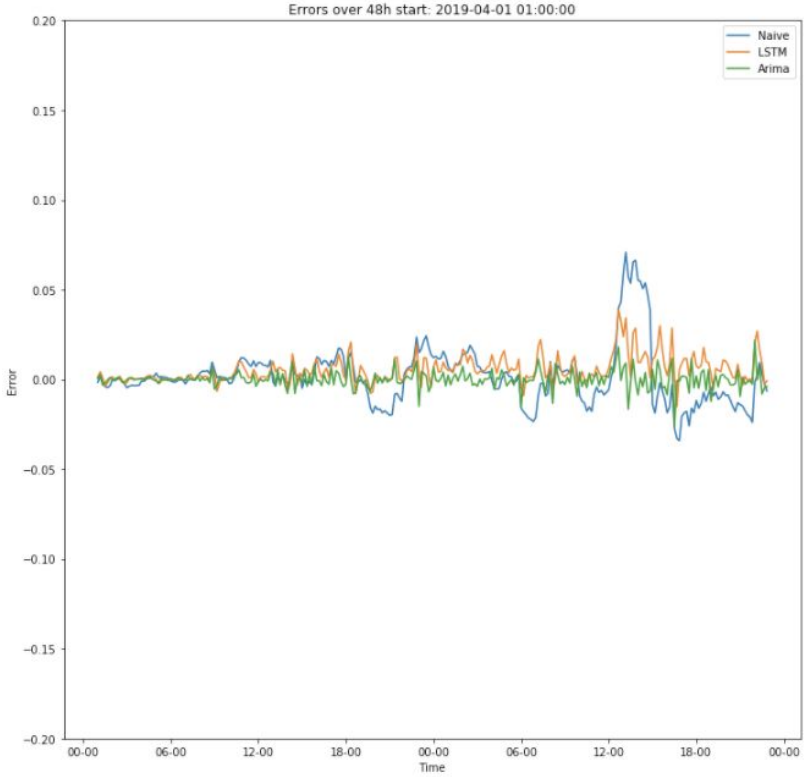
Modelling

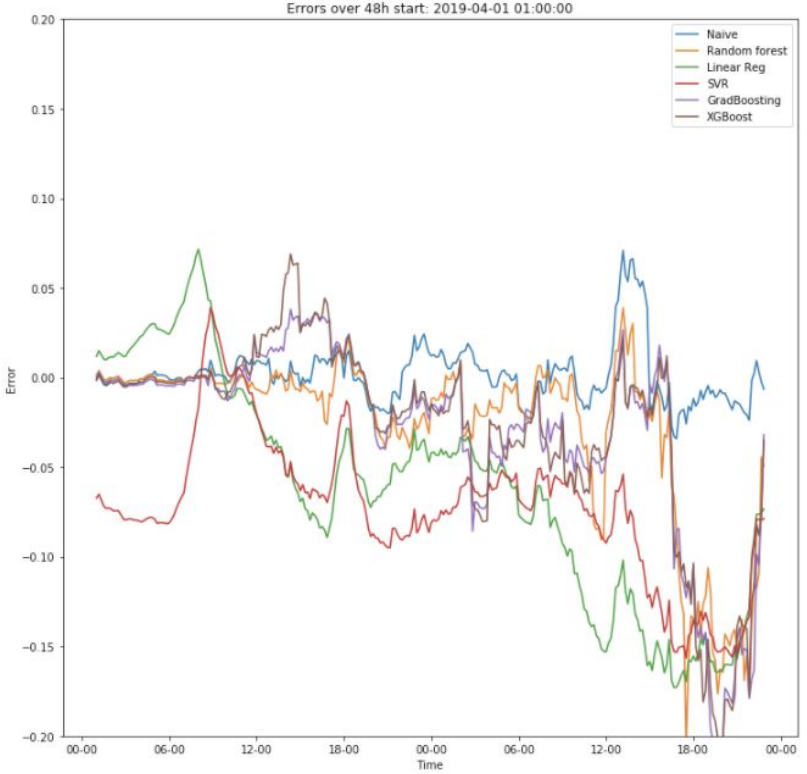
Error of different supervised models
Different starting points and 48 hour forecast





Error of Naive, ARIMA and LSTM
Different starting points and 48 hour forecast





04

Pros and cons of different models

Pros and cons of different models

Supervised models - Pros:

-

Unsupervised models - Pros:

-

Supervised models - Cons:

-

Unsupervised models - Cons:

-

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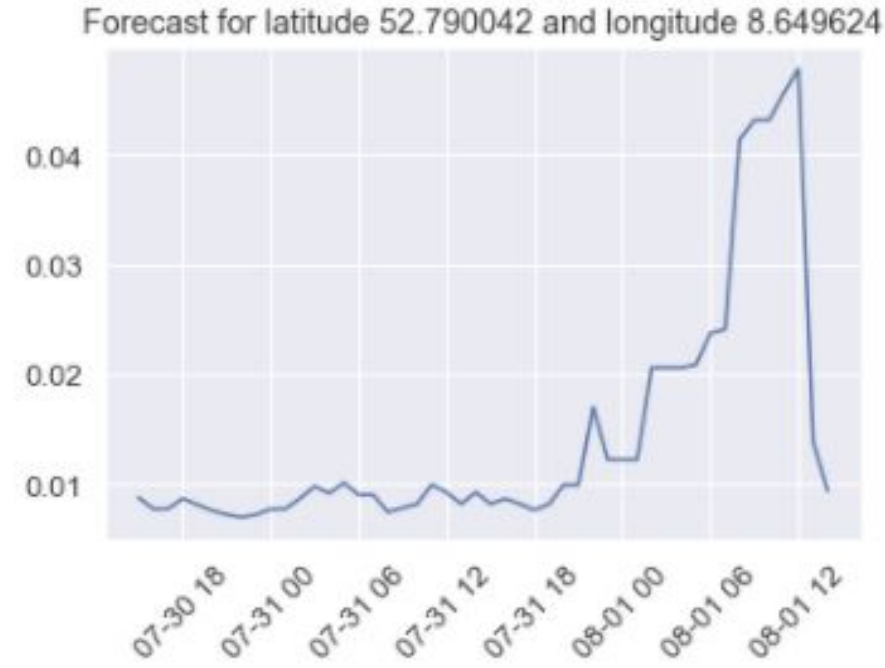
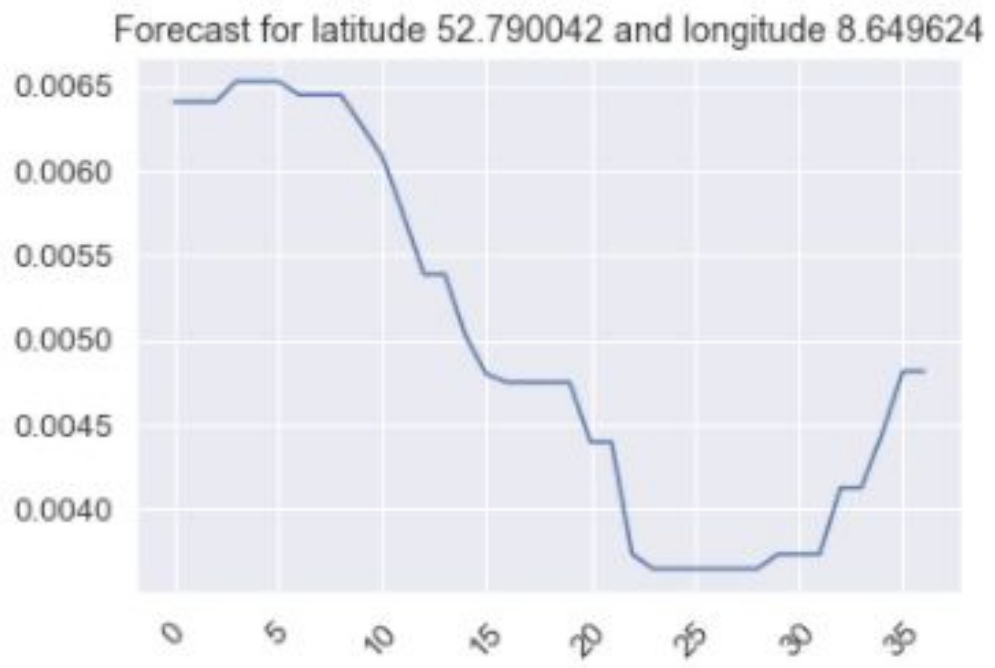
Weather forecast API

Weather forecast API to predict EinsMan





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Future work

Future work

- Gridsearch to optimize the parameter for each model
- Get more EinsMan data to predict for other Regions
- Train API models with historical data
- Build a dashboard with Einsman forecast for different Regions

Thank you for your attention