



FACCA & DC FORECASTING COMPETITION

Team Anaconda



THE TEAM



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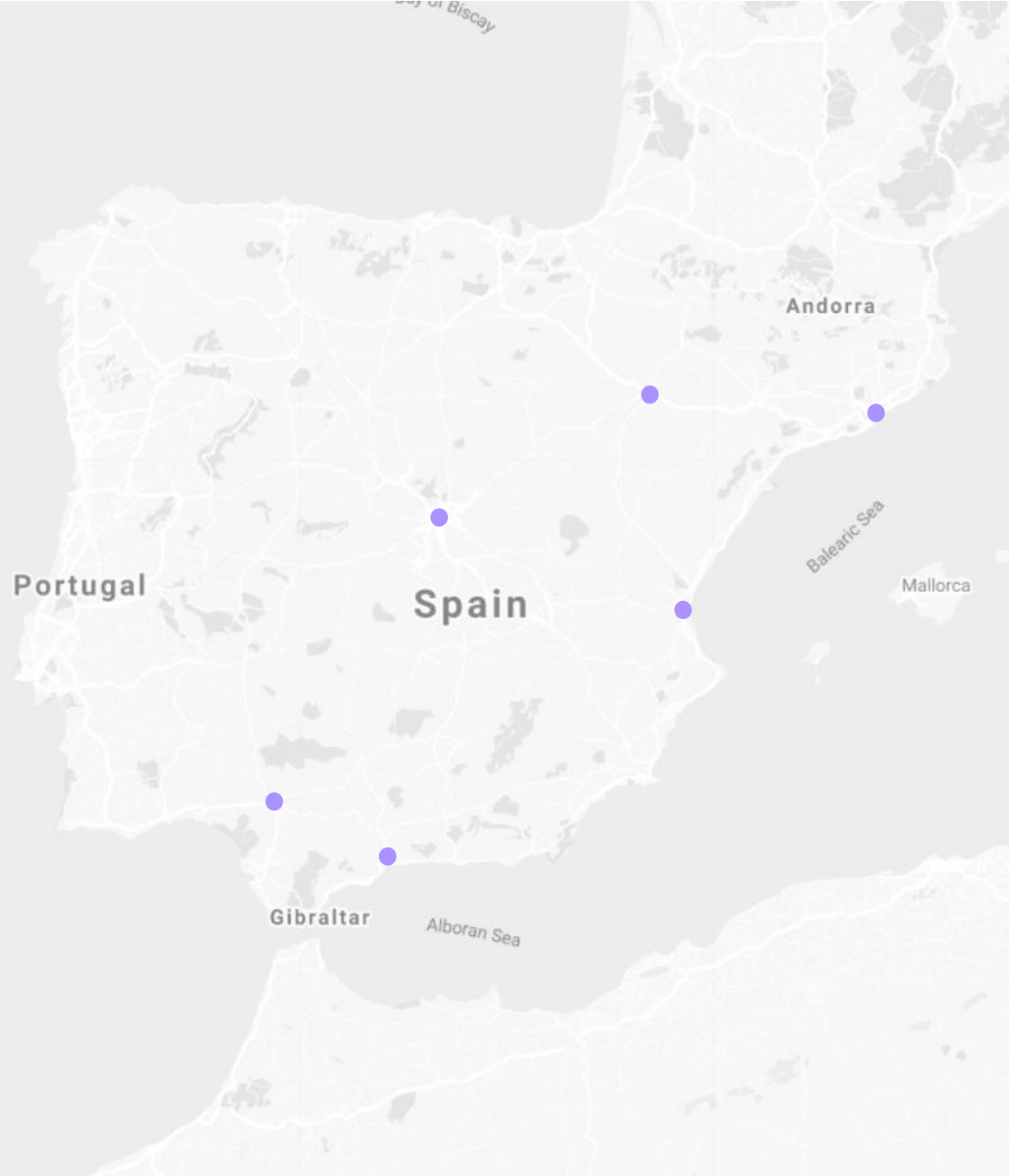
Hans-Hendrik Karro

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The Dataset



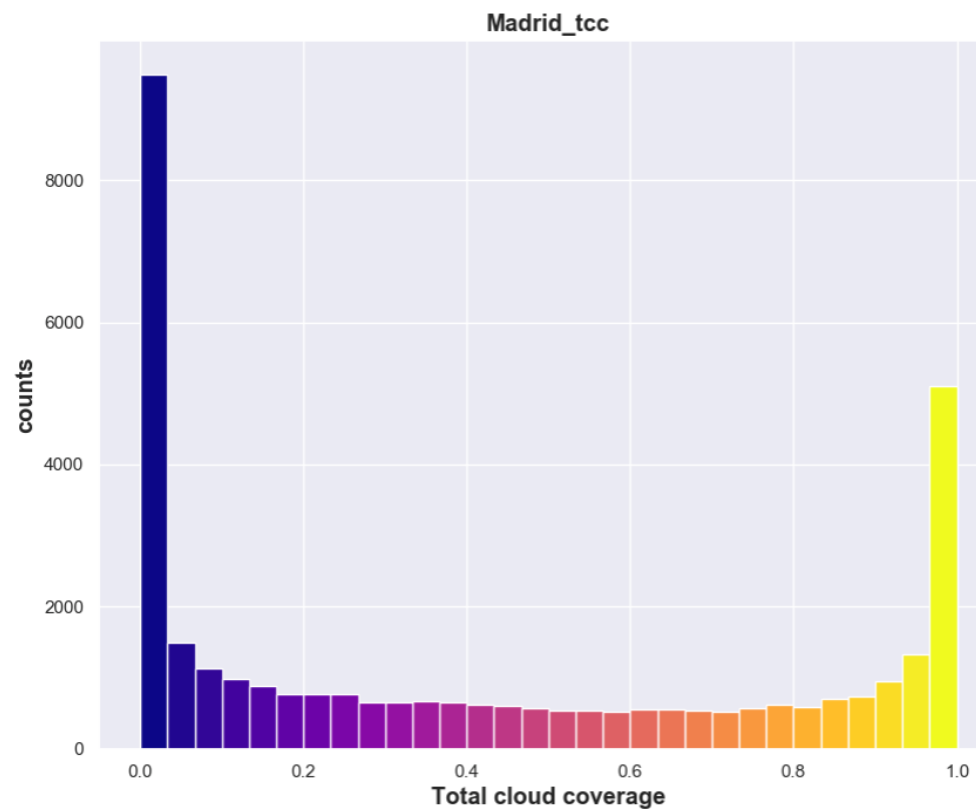
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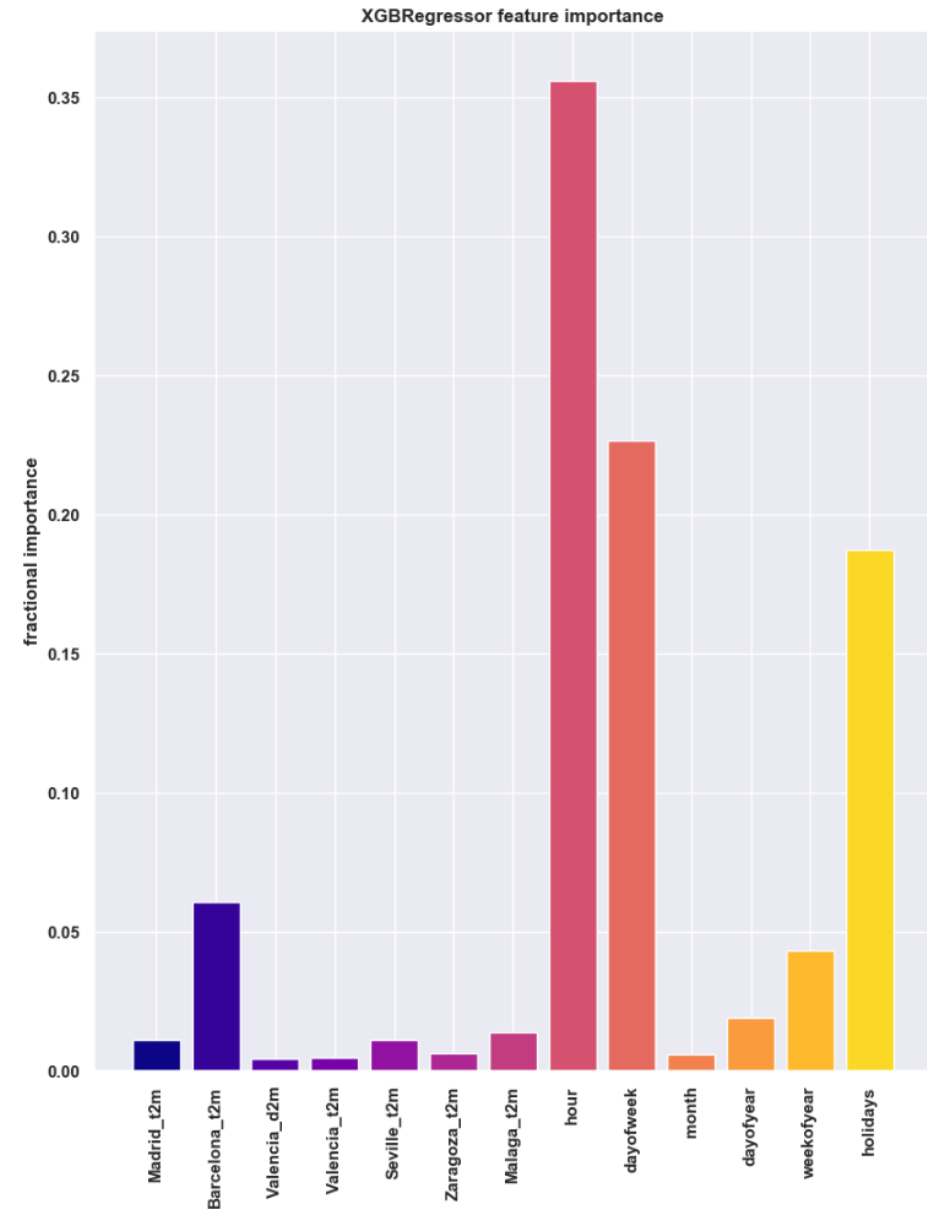
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Data Exploration

- Dataset already clean and formatted
- Seasonality (Hourly, Weekly, Monthly)
- Binary Cloud Coverage



Feature Engineering



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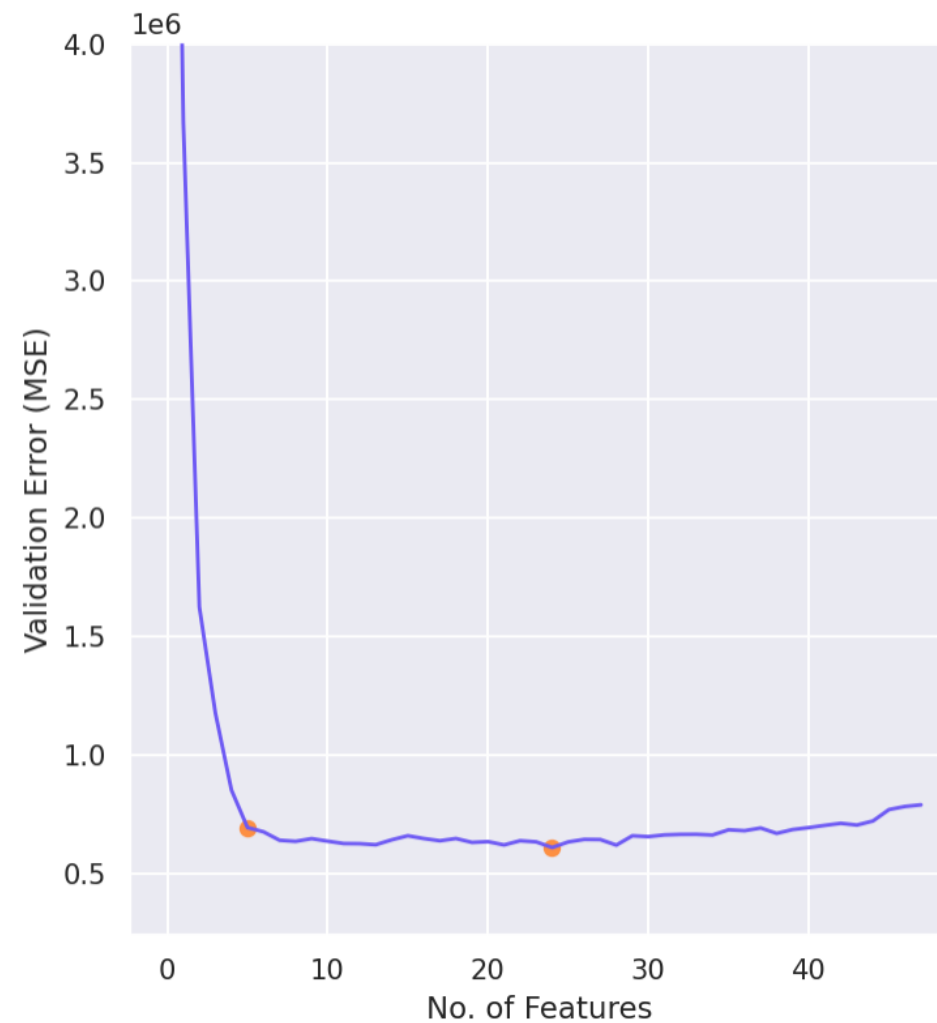
Model Selection

- Models
 - Convolutional NNs, LSTM
 - Random Forrest
 - XGBoost
- Evaluation
 - Performance on complete feature-set



Feature Selection

Forward Stepwise Selection





Training and Tuning

- Training and Validation Split: 90/10
- Hyperparameter Tuning
 - Time Series Cross-Validation
 - Randomized Search

```
n_estimators = 389
params = {
    'learning_rate': 0.0562,
    'max_depth': 7,
    'min_child_weight': 1,
    'gamma': 0.5,
    'objective': 'reg:squarederror'
}
```

```
features = [
    "hour",
    "dayofweek",
    "dayofyear",
    "Madrid_t2m",
    "holidays",
    "Malaga_t2m"
]
```

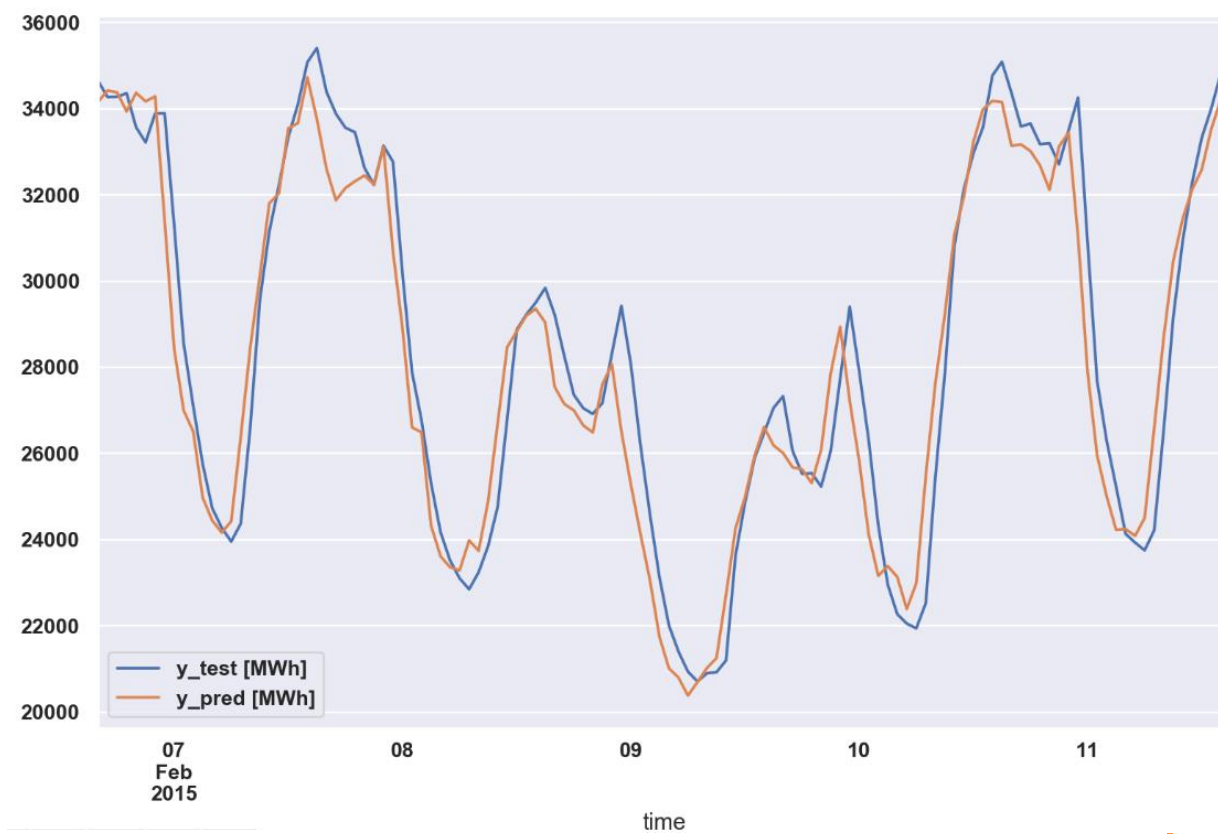

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Results

MSE	683543
MAPE	2.24 %
Accuracy	97.76 %
R^2	0.97



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Future Ideas

- More Feature Engineering
 - E.g. Lag Variables
- Splines
- LSTM, Transformers