IBM AI Workflow – Part 2 Summary Report

Chosen Models

The following models have been evaluated:

- Random Forest Regressor
- Support Vector Regressor
- Gradient Boosting Regressor

Hyperparameter Evaluation

The following grids have been applied:

- Random Forest Regressor
  - criterion: MSE, MAE
  - n_estimators: 10, 15, 20, 25
- Support Vector Regressor
  - kernel: linear, poly, rbf
- Gradient Boosting Regressor
  - n_estimators: 10, 15, 20, 25

Comparison of Models

The optimized Random Forest Regressor showed the best performance in terms of the RMSE and will thus be used in production.

In the following table, scores for all countries and models are shown.

tag	rmse	runtime	version	version_note
portugal	1076	000:00:05	0.1	supervised learing model for time-series - Random Forest Regressor
united_kingdom	44102	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor
hong_kong	933	000:00:02	0.1	supervised learing model for time-series - Random Forest Regressor
eire	2932	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor

spain	466	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor
france	941	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor
singapore	871	000:00:02	0.1	supervised learing model for time-series - Random Forest Regressor
all	28681	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor
norway	407	000:00:03	0.1	supervised learing model for time-series - Random Forest Regressor
germany	536	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor
netherlands	168	000:00:04	0.1	supervised learing model for time-series - Random Forest Regressor
portugal	2381	000:00:04	0.2	supervised learing model for time-series - Support Vector Regressor
united_kingdom	88430	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
hong_kong	2167	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
eire	5225	000:00:03	0.2	supervised learing model for time-series - Support Vector Regressor
spain	775	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
france	1040	000:00:03	0.2	supervised learing model for time-series - Support Vector Regressor
singapore	4891	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
all	72790	000:00:03	0.2	supervised learing model for time-series - Support Vector Regressor
norway	441	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
germany	944	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
netherlands	391	000:00:02	0.2	supervised learing model for time-series - Support Vector Regressor
portugal	668	000:00:05	0.3	supervised learing model for time-series - Gradient Boosting Regressor
united_kingdom	47112	000:00:03	0.3	supervised learing model for time-series - Gradient Boosting Regressor
hong_kong	521	000:00:02	0.3	supervised learing model for time-series - Gradient Boosting Regressor

eire	2127	000:00:03	0.3	supervised learing model for time-series - Gradient Boosting Regressor
spain	535	000:00:03	0.3	supervised learing model for time-series - Gradient Boosting Regressor
france	1025	000:00:02	0.3	supervised learing model for time-series - Gradient Boosting Regressor
singapore	1639	000:00:02	0.3	supervised learing model for time-series - Gradient Boosting Regressor
all	43022	000:00:03	0.3	supervised learing model for time-series - Gradient Boosting Regressor
norway	344	000:00:02	0.3	supervised learing model for time-series - Gradient Boosting Regressor
germany	830	000:00:02	0.3	supervised learing model for time-series - Gradient Boosting Regressor
netherlands	225	000:00:03	0.3	supervised learing model for time-series - Gradient Boosting Regressor