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

o criterion: MSE, MAE

o n_estimators: 10, 15, 20, 25

• Support Vector Regressor

o kernel: linear, poly, rbf

• Gradient Boosting Regressor

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

				supervised learing model for time-
spain	466	000:00:04	0.1	series - Random Forest Regressor
Spani	100	000.00.01	0.1	supervised learing model for time-
france	941	000:00:04	0.1	series - Random Forest Regressor
Harice	311	000.00.01	0.1	supervised learing model for time-
singapore	871	000:00:02	0.1	series - Random Forest Regressor
Singapore	071	000.00.02	0.1	supervised learing model for time-
all	28681	000:00:04	0.1	series - Random Forest Regressor
un	20001	000.00.04	0.1	supervised learing model for time-
norway	407	000:00:03	0.1	series - Random Forest Regressor
1101 Way	107	000.00.03	0.1	supervised learing model for time-
germany	536	000:00:04	0.1	series - Random Forest Regressor
germany	330	000.00.04	0.1	supervised learing model for time-
netherlands	168	000:00:04	0.1	series - Random Forest Regressor
Hetherianas	100	000.00.04	0.1	supervised learing model for time-
portugal	2381	000:00:04	0.2	series - Support Vector Regressor
portugui	2301	000.00.04	0.2	supervised learing model for time-
united kingdom	88430	000:00:02	0.2	series - Support Vector Regressor
united_kingdom	00430	000.00.02	0.2	supervised learing model for time-
hong_kong	2167	000:00:02	0.2	series - Support Vector Regressor
HOUR_KOUR	2107	000.00.02	0.2	supervised learing model for time-
eire	5225	000:00:03	0.2	series - Support Vector Regressor
Circ	3223	000.00.03	0.2	supervised learing model for time-
spain	775	000:00:02	0.2	series - Support Vector Regressor
Spann	775	000.00.02	0.2	supervised learing model for time-
france	1040	000:00:03	0.2	series - Support Vector Regressor
				supervised learing model for time-
singapore	4891	000:00:02	0.2	series - Support Vector Regressor
				supervised learing model for time-
all	72790	000:00:03	0.2	series - Support Vector Regressor
				supervised learing model for time-
norway	441	000:00:02	0.2	series - Support Vector Regressor
,				supervised learing model for time-
germany	944	000:00:02	0.2	series - Support Vector Regressor
,				supervised learing model for time-
netherlands	391	000:00:02	0.2	series - Support Vector Regressor
				supervised learing model for time-
				series - Gradient Boosting
portugal	668	000:00:05	0.3	Regressor
				supervised learing model for time-
				series - Gradient Boosting
united_kingdom	47112	000:00:03	0.3	Regressor
				supervised learing model for time-
				series - Gradient Boosting
hong_kong	521	000:00:02	0.3	Regressor

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