Abrosimova Maria. Test Task

Task

1. Get familiar with ETNA time-series library and concept of time-series back-testing.

2. Use CatBoostPerSegment and pipeline to build and validate your model. You basically need to use Get Started of the library.

3. Build very simple Streamlit app where user can train and validate model. Use transforms of your choice.

4. Visualize the results of model backtest and forecasts in the app.

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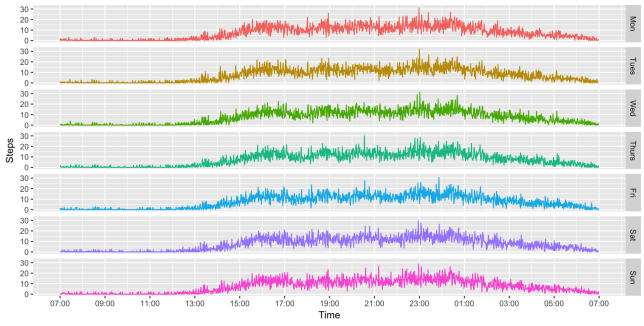
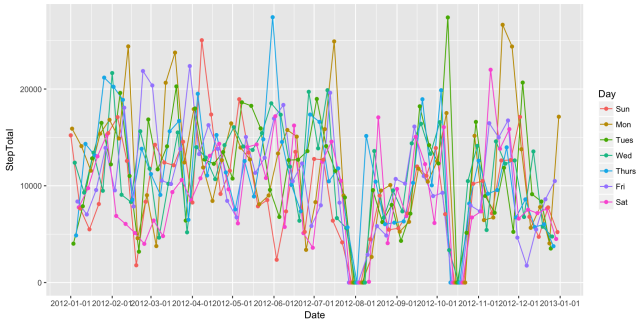
Time Series examples





Choose DataSet

example_dataset
generated_periodic_dataset

Show data and time-series 📈

Choose a horizon

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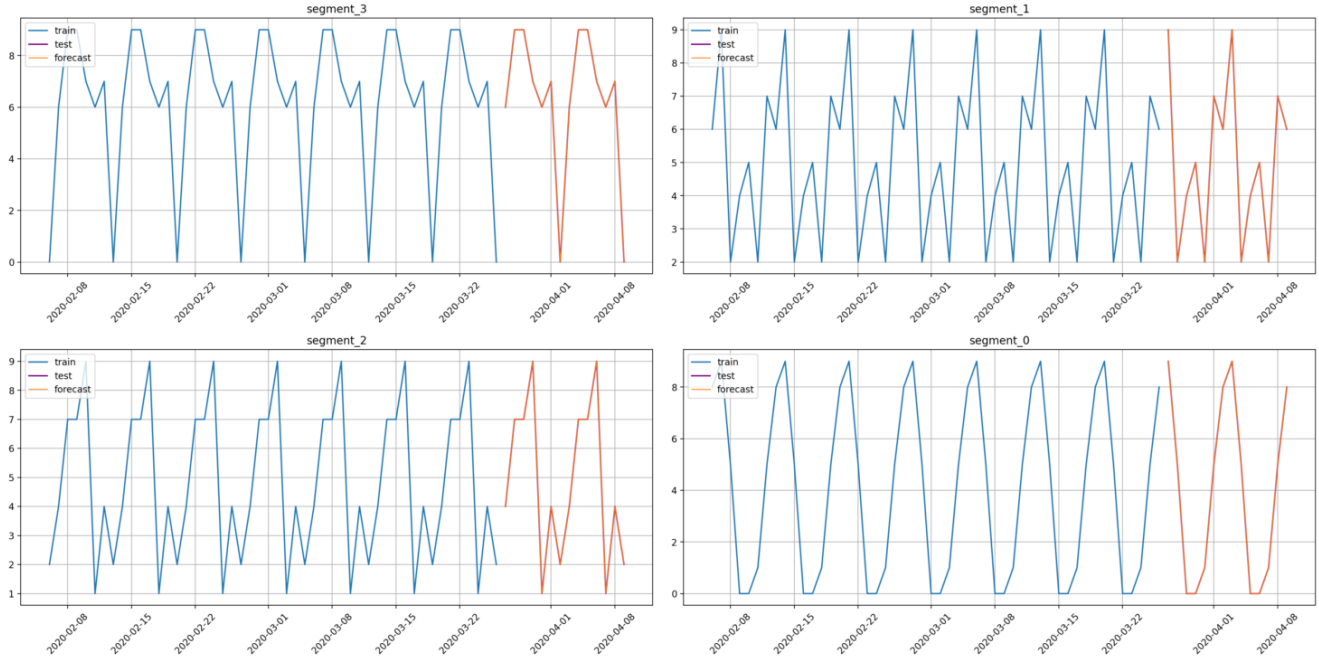
Build & validate model 📉

Forecast table

timestamp	segment_0	segment_1	segment_2	segment_
	⚠ target	⚠ target	⚠ target	⚠ target
2020-03-27 00:00:00	9	9	4	
2020-03-28 00:00:00	5	2	7	
2020-03-29 00:00:00	0	4	7	
2020-03-30 00:00:00	0	5	9	
2020-03-31 00:00:00	1	2	1	
2020-04-01 00:00:00	5	7	4	
2020-04-02 00:00:00	8	6	2	
2020-04-03 00:00:00	9	9	4	
2020-04-04 00:00:00	5	2	7	

Forecast visualization



When constructing a forecast using Models and further evaluating the prediction metrics, we measure the quality at one time interval, designated as test.

▶ selects a period of time in the past

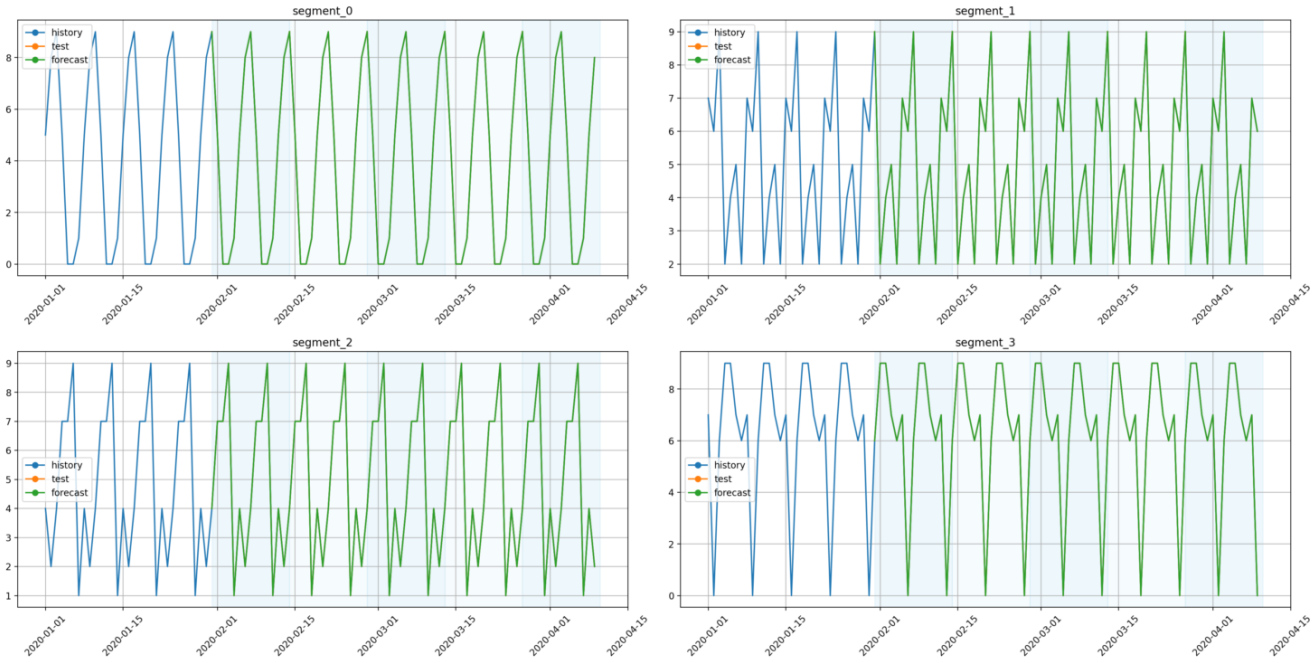
▶ builds a model using the selected interval as a training sample

▶ predicts the value on the test interval and calculates metrics

Metrics

	segment	MAE	MSE	SMAPE
0	segment_0	0.0001	0	57.1447
1	segment_1	0.0001	0	0.0022
2	segment_2	0.0001	0	0.004
3	segment_3	0.0001	0	28.5719

Backtest visualisation



Made with Streamlit