Towards Context Aware Food Sales Prediction
Indrė Žliobaitė, Jorn Bakker, Mykola Pechenizkiy

Food Sales Prediction

Challenges
- Shortness of data streams
- Noise
- Concept drift

Context Aware Prediction
Learn whether it is possible to learn from time series:
- Bottom up: learn mapping from structural features to predictors
- Top down: cluster time series according to structural prototypes

Experimental Design
Prediction:
First 70 points is train data for learning predictors
Last 50 points are for evaluating the predictors performance

Results
For the train set it possible to predict the best predictor for a given time series. Results for the test set are worse:

Challenges
- Shortness of data streams
- Noise
- Concept drift

In the test set the data is even shorter.
The structural features are not distinctive enough (see Figure).

Implications for business:
- It is hard to beat simple methods
- The clustering of time dependent sequences is hard
- Prediction should be utility-driven

References: