

Exercise Sheet 4:

January 26, 2023

Predict and Evaluate Individual Probability Distributions

- 1) Quantile Regression
 - a) quantile regression or individually predict variance under PDF assumption (can also try flow, etc) ...
 - b) evaluation for predictions of 95 percentile (for subsequent order optimization to avoid out-of-stock situations in 95% of cases): actual sales in test set higher than predictions in 5% of cases ...
- 2) Qualitative and quantitative evaluation (See <https://arxiv.org/abs/2009.07052> for a detailed description.)
 - a) Plot a histogram of the CDF values of your predictions for the corresponding actuals.
 - b) earth mover's distance for quantitative evaluation ...
- 3) demand shaping: estimate causal effect of promotion ...
- 4) cannibalization model ...

For the discussion of all 4 exercise sheets on February 17, please gather in 4 groups of ~5 students. Each group will present their results of one of the 4 exercise sheets.