

Data Mining and Exploration

Interim Report

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What we have done so far:

- Pre-processing:
 - Replaced missing values with both zeros and mean values.
 - Converted the dataset to a binary bag-of-features.
- Familiarized ourselves with Naive Bayes, SVMs, and Decision Trees.

The data we have chosen for this project is the Orange telecom customer behaviour dataset. We have been provided with a labelled training set for the data focusing on predicting the customer churn (switch providers), appetancy (tendency to buy new products) or purchase upgrades. To respect customer privacy, both the order of the customers as well as the variables in the dataset have been shuffled.

After inspecting the data, we have identified that it contains both numerical and categorical values. We began with preprocessing the numerical data. We replaced all the entries that were empty with zero. Secondly we replaced the zero entries with the mean of the values of each variable in the dataset. In the case of the categorical data, we changed the empty strings to Not Available. We then converted all the strings to numeric values so we can handle data operations easier.

What we plan on doing:

- See which pre-processing techniques and features work best for different classifiers.
- Familiarize ourselves with more classifiers.
- Compare the performance of the classifiers with the criteria described below.

What comparisons we want to run:

- Split data up randomly: 80% of instances will be the training set and 20% the test set.
- Perform 5-fold cross-validation on the training set and do final evaluation on the test set.
- For each classifier we store their accuracy, confusion matrix, ROC curve and AUC.