

Twitter Sentiment Analysis

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Introduction

Aim

Aggregate sentiment values of different tweets by a value specific keyword via the Twitter API.

- ▶ Load Tweets from Twitter API
- ▶ Preprocessing
- ▶ Classification
- ▶ Aggregation of overall sentiment

Scope of Stage 2

- ▶ Wrap sentiment analysis application into a simple Web service
- ▶ Provide a GUI for testing and demonstrating the service
- ▶ Experiment with different algorithms to improve original implementation

Web service

We implemented a RESTful Web service by the use of Spring MVC which allows to register a company and fetch the general feeling (sentiment) of the Twitter community about that company.

- ▶ */register*: Register company
- ▶ */sentiment*: Fetch sentiment of the registered company by params:
 - ▶ *name* - the name of the company
 - ▶ *startDate* - start date range (Format: yyyy-MM-dd)
 - ▶ *endDate* - end date range (Format: yyyy-MM-dd)
 - ▶ *classifier* - the classifier (*SVM_C_SVC*, *SVM_NU_SVC*, *SMO*, *NAIVE_BAYES*, *BAYES_NET* or *KNN*)

Web interface

A simple Web interface GUI was implemented to interact with the REST Web service

- ▶ Bootstrap¹ HTML/CSS/JS Framework
- ▶ AngularJS² for REST interaction

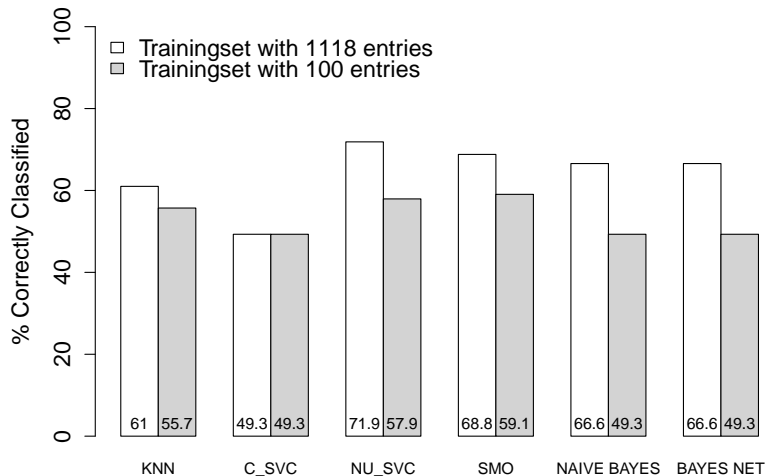
¹<http://getbootstrap.com>

²<http://angularjs.org>

Classification Algorithms

- ▶ Support Vector Machine C SVC
- ▶ Support Vector Machine Nu SVC
- ▶ SMO
- ▶ Naïve Bayes
- ▶ Bayes Net
- ▶ K-Nearest Neighbour

Evaluation Results



Lessons learned/Conclusion

- ▶ Classification accuracy is strongly depended on (quality of) the training set
- ▶ Twitter API is very strict and restricted (search for only a few days, no time restriction possible)