NLP4WEB PROJECT

Group 1
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RESEARCH PROBLEM

- Analyze tweets from authors of different domains (e. g. news, sports, politics, …)
- Example use case:
  - Identify terrorists based on their communication/language style

- Baseline: Random classification (n authors → Accuracy 1/n)

APPROACH

- Use Twitter API to obtain the raw data because it offers a variety of tweets from different domains (or use ANC corpus in addition)
- Preprocessing of raw data using DKPro (Tokenization, POS-Tagging, Normalization, Chunking, …)
- Data exploration and extraction of domain-specific features based on style of writing (vocabulary, linguistic style, grammar, emoticons, hashtags, …)
- Train several state-of-the-art classifiers to perform the classification task (e. g. Artificial Neural Networks, Naïve-Bayes, …) and tuning of parameters, feature and model selection
- Evaluate the classifier(s) using ROC-Curves, Confusion Matrix, Precision, Recall, …

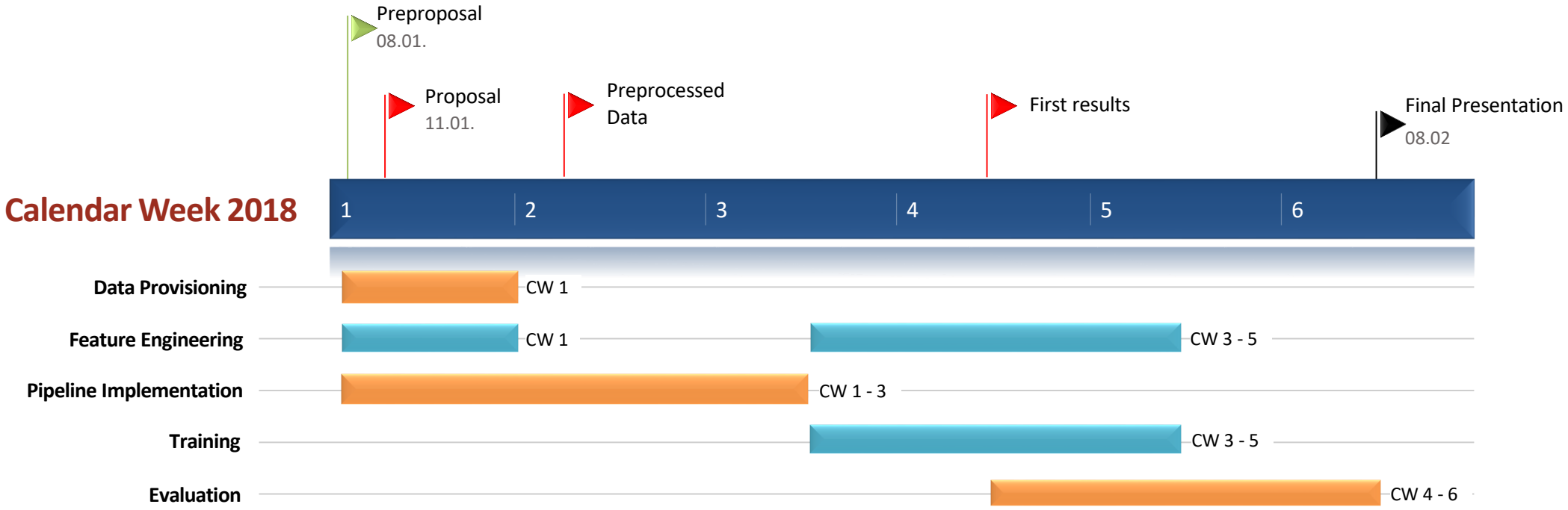
FRAMEWORKS + RESOURCES

- Frameworks, e. g.
  - DKPro (Preprocessing of raw data)/DKPro TC
  - Weka
  - CRFSuite
  - DeepLearning4J (experimental)
  - Jsoup
- Resources
  - Twitter API
    https://developer.twitter.com/en/docs/tweets/search/overview
  - News Authorship Identification with Deep Learning
    https://cs224d.stanford.edu/reports/ZhouWang.pdf
  - (ILSP Focused Crawler)
    http://nlp.ilsp.gr/redmine/projects/ilsp-fc/wiki/Getting_Started
  - (Crawler4J)
    https://github.com/yasserg/crawler4j/

ORGANIZATION

- Data Provisioning (crawler, corpus) → **Philipp Kapelle**
- Data Preprocessing (feature extraction, data format) → **Fabian Otto**
- Analysis (train and choose models) → **Clemens Biehl, Daniel Wehner**
- Evaluation → **Clemens Biehl, Daniel Wehner**

TIMELINE


Preproposal
08.01.
Proposal
11.01.
Preprocessed Data
First results
Final Presentation
08.02
Calendar Week 2018
1
2
3
4
5
6
Data Provisioning
CW 1
Feature Engineering
CW 1
CW 3 - 5
Pipeline Implementation
CW 1 - 3
Training
CW 3 - 5
Evaluation
CW 4 - 6

THANK YOU VERY MUCH

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