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The political discourse on discrimination

Analysing 70 years of the Bundestag

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About me

Alexandra Wörner

Data scientist

Member in CorrelAid project team

Feminist

Diversity & inclusion

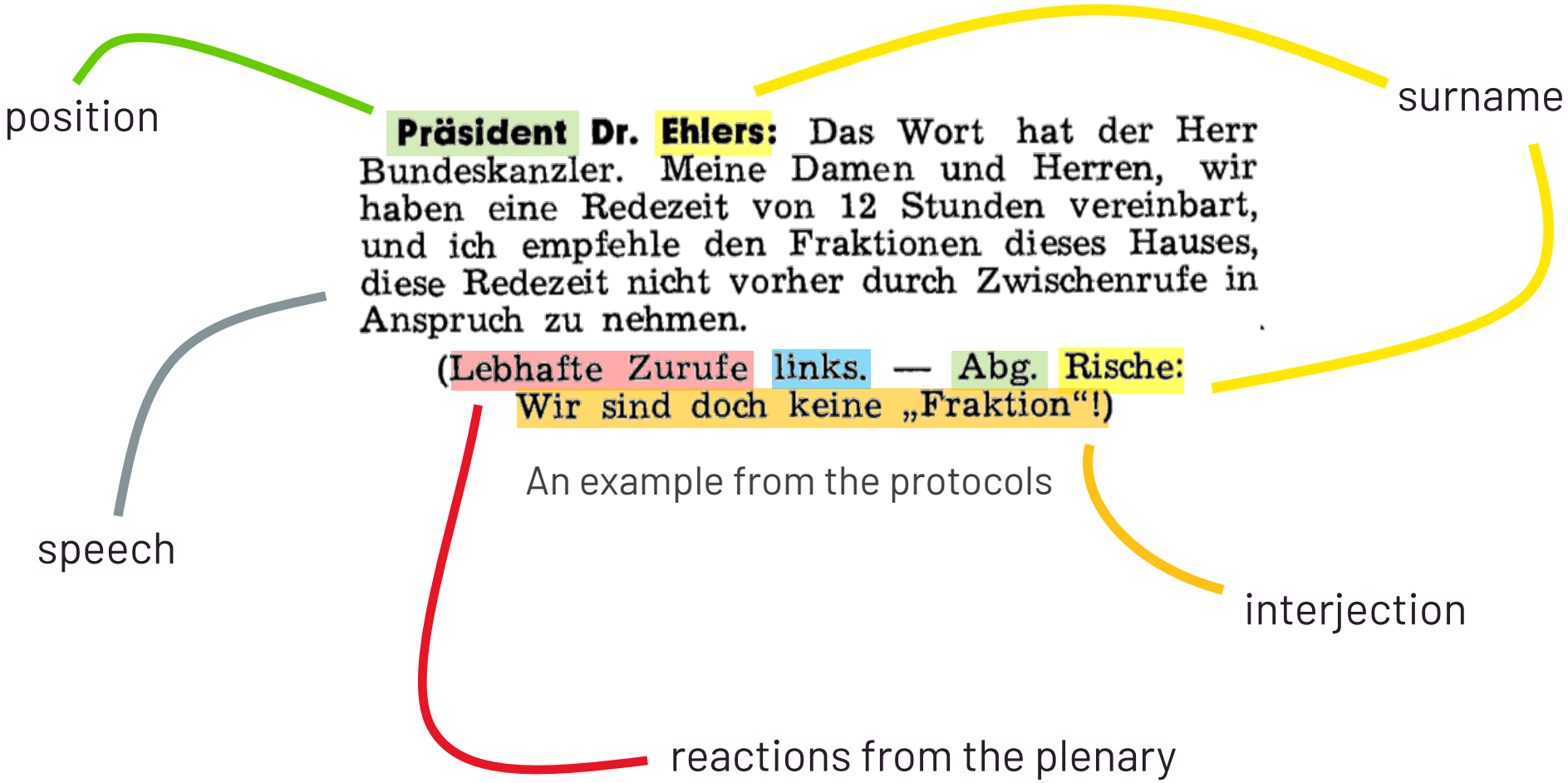
Interest in politics

What? facilitate machine readability of plenary protocols

How? techniques from computer science and computer linguistics

Why? German constitution states the publicness of the Bundestag

Elements of a speech extract



From the 190th session of the first German Bundestag
courtesy of Open Discourse (Florian Richter)

Facts & numbers

4265 protocols

4106 speakers

~ 900000 speeches

~ 2.1 Mio. interjections

~ 194 Mio. words

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What is fed into the models?

Google trains a multitude of models every day.

Tokenization & lemmatization

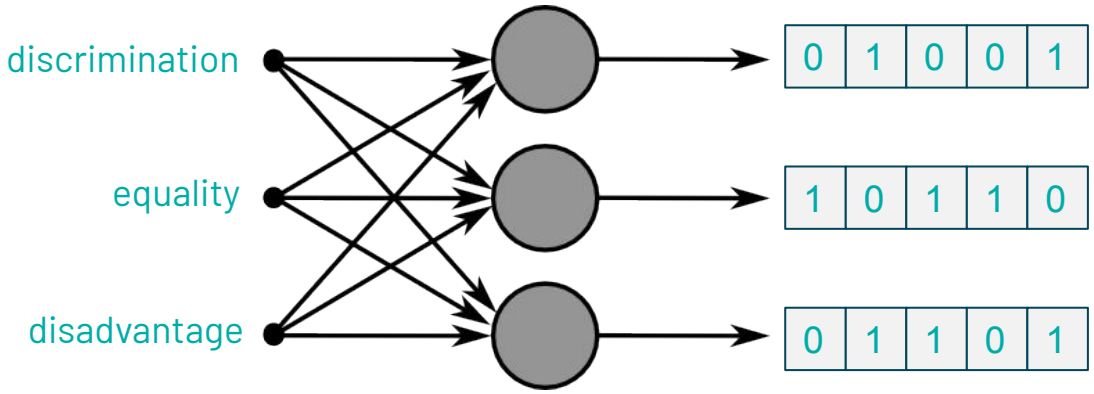
google - train - a - multitude - of - model - every - day - .

PROPN VERB DET NOUN ADP NOUN DET NOUN PUNCT

Model input

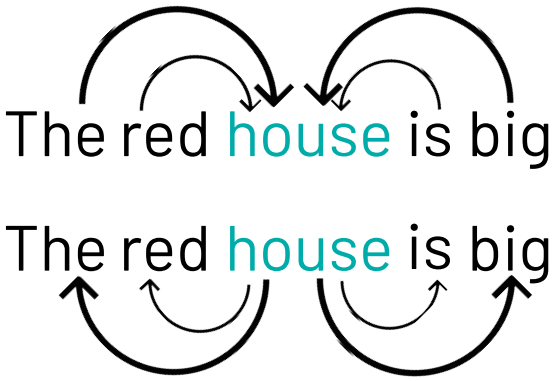
google - train - multitude - model - day

Semantic Analysis: Word2Vec

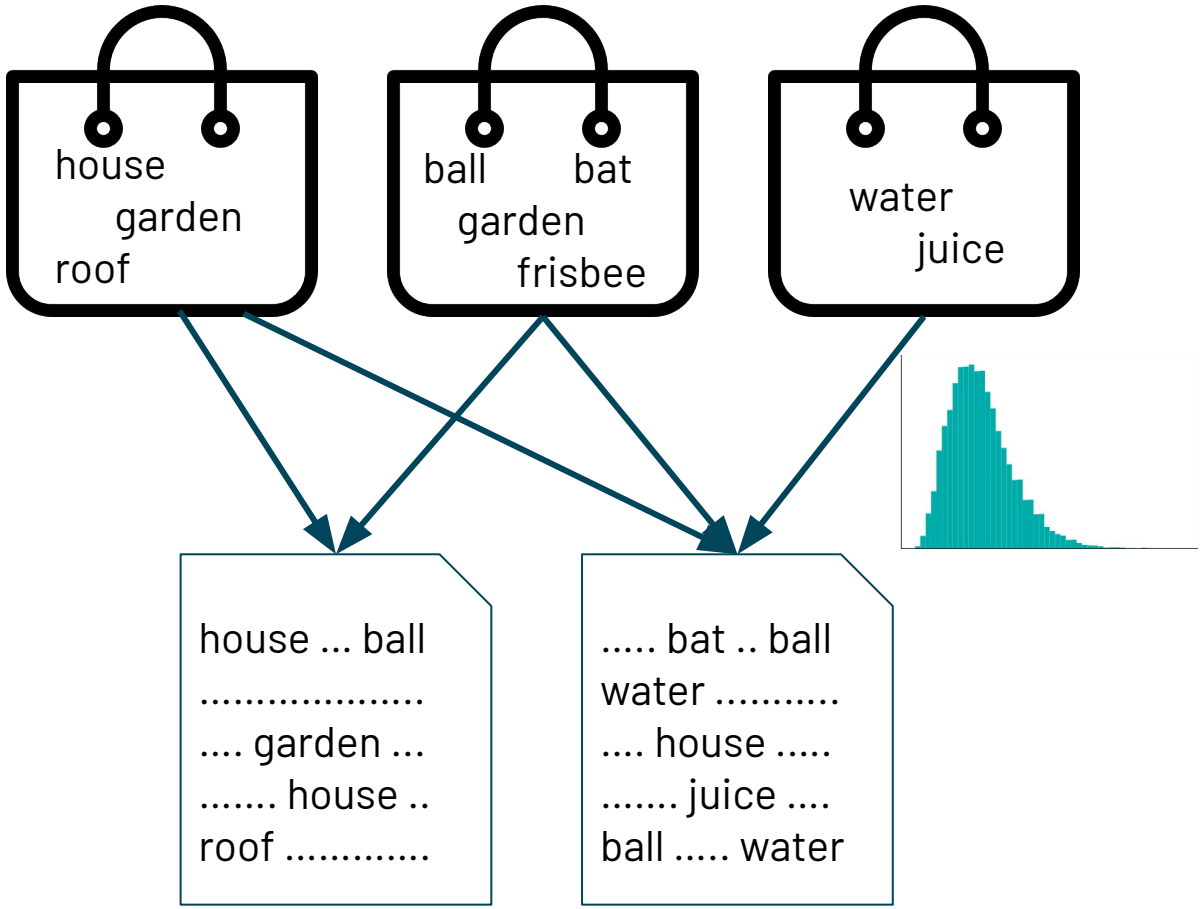


Two approaches

- Continuous bag of words
- Skipgrams



Semantic Analysis: Latent Dirichlet Allocation



	topic 1	topic 2	topic 3
house	0.8	0.1	0.1
garden	0.65	0.35	0
roof	0.95	0.02	0.03
ball	0.2	0.75	0.05
bat	0.15	0.82	0.03
frisbee	0.11	0.88	0.01
water	0.3	0	0.7
juice	0.06	0.04	0.9

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Demo time!

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Q & A

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Backup

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Implementation

python & jupyter

spacy for preprocessing

Word2Vec with gensim

scikit-learn contains LDA-implementation

plotly, wordcloud & pyLDAvis for visualisation