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Project Presentation

# **Explicit Sentiment Analysis with Language Patterns about Uncer- tainty**

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## Goals

1. Extract a dataset about semantic uncertainty from the web archive data.
  - Use specific language patterns about uncertainty
  - Classify samples into positive/negative sentiments
  - Compare dataset to Sentiment140<sup>1</sup>
2. Train a sentiment classifier based on DistilBERT on our dataset using transfer learning.
  - Baseline classifier is finetuned on SST-2<sup>2</sup>
  - Benchmark our classifier on Sentiment140

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<sup>1</sup><https://huggingface.co/datasets/sentiment140>

<sup>2</sup><https://huggingface.co/distilbert-base-uncased-finetuned-sst-2-english>

# Language Patterns

	Global	Abstracts	Full papers	BioScope	FactBank	WikiWeasel
<b>Epist.</b>	may 1508	suggest 616	may 228	suggest 810	may 43	may 721
	suggest 928	may 516	suggest 194	may 744	could 29	probable 112
	indicate 421	indicate 301	indicate 103	indicate 404	possible 26	suggest 108
	possible 304	appear 143	possible 84	appear 213	likely 24	possible 93
	appear 260	or 119	might 83	or 197	might 23	likely 80
	might 256	possible 101	or 78	possible 185	appear 15	might 78
	likely 221	might 72	can 73	might 155	seem 11	seem 67
	or 198	potential 72	appear 70	can 117	potential 10	could 55
	could 196	likely 60	likely 57	likely 117	probable 10	perhaps 51
	probable 157	could 56	could 56	could 112	suggest 10	appear 32
<b>Dox.</b>	consider 276	putative 43	putative 37	putative 80	expect 75	consider 250
	believe 222	think 43	hypothesis 33	hypothesis 77	believe 25	believe 173
	expect 136	hypothesis 43	assume 24	think 66	think 24	allege 81
	think 131	believe 14	think 24	assume 32	allege 8	think 61
	putative 83	consider 10	expect 22	predict 26	accuse 7	regard 58

**Figure 1:** The most frequent cues in the English corpora.<sup>3</sup>

<sup>3</sup>[http://doktori.bibl.u-szeged.hu/id/eprint/2291/1/Vincze\\_Veronika\\_tezis.pdf](http://doktori.bibl.u-szeged.hu/id/eprint/2291/1/Vincze_Veronika_tezis.pdf), p. 43

## Task Details

- Dataset
  - Extract data from web archive
  - Annotate with Twitter-roBERTA-base-sentiment model<sup>4</sup>
  - Topic extraction for web archive dataset
  - Questions: Which topics is the internet most uncertain about? Have those changed over the years?
- Model
  - Leave out Twitter URLs of Web Archive to prevent Train-Test-Leakage
  - Can transfer learning on exclusively uncertain language samples improve sentiment detection?

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<sup>4</sup><https://huggingface.co/cardiffnlp/twitter-roberta-base-sentiment-latest>

# Explicit Sentiment Analysis with Language Patterns about Uncertainty

