

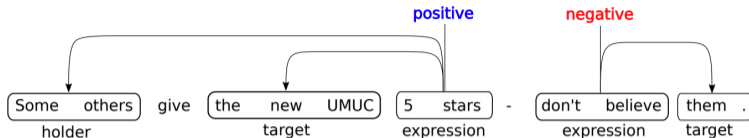
Seminar Topics: Information Extraction

English topics!

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Structured Sentiment Analysis



- ▶ Structured analysis:
 - ▶ monitor only some target entities
 - ▶ monitor only the opinions of some users
- ▶ Project:
 - ▶ Discuss the problem of structured sentiment analysis. What datasets are available? Different variations (targeted or aspect-based).
 - ▶ Discuss a few approaches to solve the task.
 - ▶ What difficulties do we face?
- ▶ Resources:
 - ▶ Barnes et al., 2022, **SemEval 2022 Task 10: Structured Sentiment Analysis** *Proceedings of the 16th International Workshop on Semantic Evaluation*

Multimodal Information Extraction

- ▶ Extract information from the combination of multiple data modalities:
 - ▶ text, picture, sound, video
 - ▶ E.g. we often use pictures to make our message clear: sarcastic meme
- ▶ Project:
 - ▶ How can we fuse texts with other modalities for IE?
 - ▶ Discuss a few tasks where multimodal IE is important.
 - ▶ What model architectures can be used?
 - ▶ What are the hard aspects of the task?
- ▶ Resources:
 - ▶ Fersini et al., 2022, **SemEval-2022 Task 5: Multimedia Automatic Misogyny Identification** *Proceedings of the 16th International Workshop on Semantic Evaluation*
 - ▶ Sharma et al., 2020, **SemEval-2020 Task 8: Memotion Analysis- The Visuo-Lingual Metaphor!** *Proceedings of the 14th International Workshop on Semantic Evaluation*



Figure 2: A sarcastic meme on un-

Information Extraction from Language Models

- ▶ Extract information from trained neural language models instead of texts.
- ▶ Language model training:
 - ▶ I went to a concert Saturday [?] → night
- ▶ Although they aren't directly trained to perform IE, they can answer questions or recognize entities:
 - ▶ Who is the president of the United States? [?] → Joe Biden
 - ▶ Who is the president of the [United States]^{LOC}?
- ▶ Project:
 - ▶ What kind of information is learned by pre-trained language models?
 - ▶ How can we extract them?
 - ▶ Is it superior to traditional techniques?
 - ▶ What problems do we face?
- ▶ Resources:
 - ▶ Liu et al., 2019, **Linguistic Knowledge and Transferability of Contextual Representations** *Proceedings of NAACL-HLT 2019*
 - ▶ Petroni et al., 2019, **Language Models as Knowledge Bases?** *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing*
 - ▶ Cao et al., 2021, **Knowledgeable or Educated Guess? Revisiting Language Models as Knowledge Bases** *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics*

Questions?

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