Information Extraction Topics WiSe 2022/23

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1 Canonicalisation of Open Knowledge Bases

2 Song Lyric Segmentation

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Example

"Obama was born in Honolulu" == "Barack Obamas birthplace is Honolulu"

- Luis Galárraga, Geremy Heitz, Kevin Murphy, and Fabian M. Suchanek. 2014. Canonicalizing Open Knowledge Bases. In Proceedings of the 23rd ACM International Conference on Conference on Information and Knowledge Management (CIKM '14).
- Shikhar Vashishth, Prince Jain, and Partha Talukdar. 2018.
 CESI: Canonicalizing Open Knowledge Bases using
 Embeddings and Side Information. In Proceedings of the 2018
 World Wide Web Conference (WWW '18).
- Wei Shen, Yang Yang, and Yinan Liu. 2022. Multi-View Clustering for Open Knowledge Base Canonicalization. In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.

① Canonicalisation of Open Knowledge Bases

2 Song Lyric Segmentation

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- Finding the structural parts as one of the first steps

- Heng Tze Cheng, Yi-Hsuan Yang, Yu-Ching Lin, and Homer H. Chen. 2009. Multimodal structure segmentation and analysis of music using audio and textual information. In 2009 IEEE International Symposium on Circuits and Systems.
- Michael Fell, Yaroslav Nechaev, Elena Cabrio, and Fabien Gandon. 2018. Lyrics Segmentation: Textual Macrostructure Detection using Convolutions. In *Proceedings of the 27th* International Conference on Computational Linguistics.
- Kento Watanabe, Masataka Goto. 2020. A Chorus-Section Detection Method for Lyrics Text. In Proceedings of the 21st International Society for Music Information Retrieval Conference.

Canonicalisation of Open Knowledge Bases

Song Lyric Segmentation

Human-in-the-Loop Summarisation

• Summarisation is a complex information extraction task

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- "Human-in-the-loop": User collaborates with system; system should learn from feedback

- Constantin Orăsan and Laura Hasler. 2006. Computer-aided summarisation – what the user really wants. In: Proceedings of the Fifth International Conference on Language Resources and Evaluation (LREC'06).
- Avinesh P.V.S and Christian M. Meyer. 2017. Joint
 Optimization of User-desired Content in Multi-document
 Summaries by Learning from User Feedback. In Proceedings
 of the 55th Annual Meeting of the Association for
 Computational Linguistics (Volume 1: Long Papers).
- Duy-Hung Nguyen, Nguyen Viet Dung Nghiem, Bao-Sinh Nguyen, Dung Tien Tien Le, Shahab Sabahi, Minh-Tien Nguyen, and Hung Le. 2022. Make The Most of Prior Data: A Solution for Interactive Text Summarization with Preference Feedback. In Findings of the Association for Computational Linguistics: NAACL 2022.