LANG4030 Presentation

Weiqi Wang

20563565

Commonsense Reasoning with Natural Languages

By Weiqi Wang
Advised by Prof. Yangqiu Song

THE DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING
計算機科學及工程學系

Overview

Commonsense reasoning has been one of the key problems in the field of natural language processing. When humans communicate, we rely on a vast background of unspoken assumptions, known as **implicatures**, to make us communicate quickly and efficiently.

Example:
A cook took his son to a picnic yesterday. Cook has a son, cook has a wife, weather was fine, cook loved his son, etc.

Objectives

- Construct a large-scale implicature dataset by automatic extraction/human annotating.
- Propose a deep learning model architecture to learn implicatures efficiently.

Methodology workflow

Inspect commonsense knowledge datasets and define specific rules for implicature extraction.
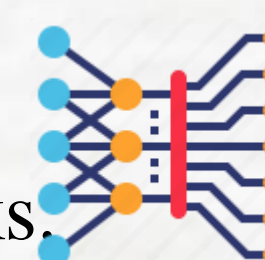
Search the commonsense knowledge and automatic extraction by the rules defined above.

Human annotation on rare events and verification on the correctness of extracted implicature knowledge.

Propose the deep learning model and train it based on the dataset collected. Perform commonsense reasoning tasks.

Analysis model's performance and do some zero-shot setting experiment to test the effect of collected dataset.

Current progress

Work Finished:
- Commonsense datasets inspection
- Extraction rule definition

Work in progress:
- Dataset compilation

Future Work:
- Implement the extraction rule
- Manually Check the quality of extracted knowledge

Conclusion

In conclusion, our project aims to construct a large-scale implicature dataset to help NLP models better learn the implicatures behind events. This may be a concrete step towards commonsense reasoning. We'll try our best to work this project out and make this resource public to contribute to the natural language processing research community.