Han Cui

West Dazhi St. No.92, Harbin, China · hcui@ir.hit.edu.cn · (+86) 198-4517-8466

Education

Harbin Institute of Technology, Harbin, Heilongjiang, China 2022.08 – Present

Postgraduate student in Computer Science and Technology, expected(Dec, 2024)

***Research Center for Social Computing and Information Retrieve**, Adviser: Yu Zhang*

Research Interests: Explainable Reasoning, Explanation Generation, Semantic Parsing

Harbin Institute of Technology, Harbin, Heilongjiang, China 2018.08 – 2022.08

BS. in Computer Science and Technology, Honors School

Marks of selected lesson:

- Computer System(CSAPP) 94.2, College Physics A(1) 93, Mathematical Logic 92.8, High-level Language Programming 90.4, Data Structures and Algorithms 90

Honors and Awards

- Graduate Scholarship with special distinction (2022.09)
- First Prize of Baidu Artificial Intelligence Creative Competition (1/248) (2022.04)
- People's Scholarship * 5
  2019(Spring, Autumn), 2020(Spring, Autumn), 2021(Spring)
- The New Elite Scholarship * 2 (2019, 2020)

Research and Publication

Explainable Reasoning Enhanced by External Knowledge Base Nov. 2022 – Present

- The cognitive processes underlying the performance of extant language models on diverse downstream reasoning tasks remain largely implicit. We hope that during the reasoning process of the model, the reasoning process can be given in the form of an explanation diagram, so as to improve the reliability of the model reasoning.
- On this basis, we aspire for the explanatory diagram to encompass not only content pertaining to attribute reasoning (empirical reasoning based on external knowledge base), but also incorporate basic logical reasoning (such as elementary first-order predicates, causality, etc.), thereby establishing a comprehensive explicit reasoning framework.

Token-level Explanation Extraction Method Sep. 2022 – Dec. 2022

- Given a piece of context and a query, the aim of the task is to get an answer and a piece of token-level evidence to support the answer from the model. We use a multi-layer filtering: Based on coarse retrieval, we measure the importance of perturbation locations by adding perturbations to the retrieval results and observing their impact on the confidence of the answers and the change in semantic similarity with the original text.

Publiction

Han Cui, Shangzhan Li, Yu Zhang and Qi Shi, **Explanation Graph Generation via Generative Pre-training over Synthetic Graphs**, In Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL), Findings, 2023.

Internships

Foundation Research Center, Platform and Content Group, Tencent Jun. 2023 – Sep. 2023

- NLP Algorithm engineer intern, mainly focus on Text-to-speech and the system of the large language model.