Guoqing Luo

2024

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Research interests

My research interests include machine learning, and natural language processing, especially in large language models. I am currently working on: 1) Large language model hallucination reduction; 2) Alignment methods from human feedback.

Education

University of Alberta *Edmonton, AB*
Ph.D. in Computing Science *Sept. 2023 – Jun. 2027 (expected)*
Advisor: Prof. Lili Mou

University of Alberta *Edmonton, AB*
M.S. in Computing Science *Sept. 2021 – Sept. 2023*
Advisor: Prof. Lili Mou

Wuhan University *Wuhan, China*
B.E. in Computer Science and Technology *Sept. 2017 – June 2021*
Thesis: *Dialogue System Relation Extraction Based on Domain Knowledge Graph*

Publications

UAlberta at SemEval-2024 Task 1: A Potpourri of Methods for Quantifying Semantic Textual Relatedness
Ning Shi, Senyu Li, **Guoqing Luo**, Amirreza Mirzaei, Ali Rafiei, Jai Riley, Hadi Sheikhi, Mahvash Siavashpour, Mohammad Tavakoli, Bradley Hauer and Grzegorz Kondrak
*To Appear at **SemEval** 2024*

Prompt-Based Editing for Unsupervised Text Style Transfer [2]
Guoqing Luo, Yutong Han, Lili Mou, Mauajama Firdaus
*In Proceedings of **EMNLP 2023***

An Empirical Study on the Overlapping Problem of Open-Domain Dialogue Datasets [1]
Yuqiao Wen, **Guoqing Luo** and Lili Mou
*In Proceedings of **LREC 2022*** (oral)

Chain-of-Information Prompting for Unsupervised Abstractive Dialogue Summarization
Guoqing Luo, Lili Mou, Mauajama Firdaus
In submission

Preprints

RDSGAN: Rank-based distant supervision relation extraction with generative adversarial framework [1]
Guoqing Luo, Jiaxin Pan and Min Peng

Selected research experience

MANGA-UofANLP Lab, University of Alberta *Edmonton, AB*
Research assistant | Advisor: Assistant professor Dr. Lili Mou *Feb. 2021 – present*
• Designed a prompt-based editing approach to transform a zero-shot text generation into a zero-shot classification problem for text style transfer, which is easier and more controllable than autoregressive generation.
• Achieved **state-of-the-art** performance on three benchmark style transfer datasets.

StatNLP Lab, Singapore University of Technology and Design *Singapore*
Research intern | Advisor: Associate professor Dr. Wei Lu *May 2020 – Feb. 2021*
• Designed a graph-based model for inducing speaker-oriented latent structures **SOLS** to alleviate the **entangled logic** and **information sparsity** issue in dialogue-based relation extraction tasks.
• Conducted quantitative and qualitative experiments on several public datasets to demonstrate the importance of capturing the speaker-related information in such relation extraction tasks.

WHU NLP Lab, Wuhan University *Wuhan, China*
Research intern | Advisor: Professor Dr. Min Peng *Feb. 2019 – May 2020*
• Proposed a novel generative neural framework, **RDSGAN** ,which learned the distribution of true positive instances and automatically generated valid instances to provide a clean dataset for distant supervision relation extraction.
• Submitted one paper to Arxiv as the first author.

Work experience

Bytedance Inc. *Beijing, China*
Research intern, ByteDance AI Lab *Feb. 2021 – Jun. 2021*
• Used Pytorch to replicate MOSNet (TensorFlow) and achieved comparable results on two datasets.
• Designed a new end-to-end neural network pipeline for automatic speech quality evaluation.

Shenzhen Sunline Tech Co., Ltd. *Shenzhen, China*
Software engineer intern, Sunline Data *July 2019 – Aug. 2019*
• Crawled data of a thousand-person community in **Python**, used Networkx Python to build a knowledge graph and neo4j for graph data visualization.
• Implemented the Louvain algorithm to find the most important people in the community.

Teaching experience

Department of Computing Science, University of Alberta *Edmonton, Canada*
• CMPUT 267: Basics of Machine Learning Fall 2023
• CMPUT 466: Machine Learning Winter 2023
• CMPUT 466: Machine Learning Winter 2022
• CMPUT 174: Introduction to the Foundations of Computation I Fall 2021

Volunteer experience

• EMNLP 2023 Reviewer 2023
• EMNLP 2021 Student Volunteer 2021
• Sri Lanka Nil Manil Foundation International Volunteer 2019

Skills

• **Programming Languages**: Python, C#, C/C++, MATLAB, Lingo
• **Language**: Mandarin (native), English (professional proficiency)
• **Libraries**: Pytorch, Tensorflow, pandas, NumPy, Matplotlib

Awards

• Graduate Teaching Assistantships, University of Alberta 2021,2022,2023
• Departmental Recruitment Scholarship, University of Alberta 2021
• Academic Excellent Scholarship (Top 10%), Wuhan University 2018, 2019, 2020
• Honorable Mention, ICM of Consortium for Mathematics and Its Applications 2020
• National Second Prize (Top 5%), China Undergraduate Mathematical Contest in Modeling 2019