Haozhe Ji (计昊哲)

Email: jihaozhe@gmail.com
Web: haozheji.github.io
Phone: +86 15652655811

Research Interests

My research interests center around developing **theoretically grounded and scalable algorithms** to improve neural language models on **natural language generation** and **language model alignment**.

Specifically, my current research focused to address the **distribution mis-specification** due to the limited expressivity of Auto-Regressive Modeling (ARM) and the inherent bias of Maximum Likelihood Estimation (MLE).

- To overcome the expressivity limitation of ARM, my research considered a broader spectrum of expressive model families, including semi-parametric models [8,9], memory-augmented models [5], latent variable models [6] and energy-based models [2].
- To tackle the inherent bias of MLE, my research proposed theoretically grounded and practically accessible training objectives [3, 1] and decoding frameworks [2], aiming to achieve better alignment with human language.

Education

Tsinghua University, Beijing, China — September 2020 - Present
Ph.D. Student, Computer Science and Technology
Advisor: Minlie Huang

Tsinghua University, Beijing, China — September 2016 - July 2020
B.E., Electronic Engineering

Preprints

Publications

[1] **Towards Efficient and Exact Optimization of Language Model Alignment**
Haozhe Ji, Cheng Lu, Yilin Niu, Pei Ke, Hongning Wang, Jun Zhu, Jie Tang, Minlie Huang
International Conference on Machine Learning (ICML), 2024.

[2] **Language Model Decoding as Direct Metrics Optimization**
Haozhe Ji, Pei Ke, Hongning Wang, Minlie Huang
International Conference on Learning Representations (ICLR), 2024.

[3] **Tailoring Language Generation Models under Total Variation Distance**
Haozhe Ji, Pei Ke, Zhipeng Hu, Rongsheng Zhang, Minlie Huang
International Conference on Learning Representations (ICLR), 2023. (***Notable top 5%***)

[4] **Curriculum-Based Self-Training Makes Better Few-Shot Learners for Data-to-Text Generation**
Pei Ke, **Haozhe Ji**, Zhenyu Yang, Yi Huang, Junlan Feng, Xiaoyan Zhu, Minlie Huang
International Joint Conference on Artificial Intelligence (IJCAI), 2022.

[5] **LaMemo: Language modeling with look-ahead memory**
Haozhe Ji, Rongsheng Zhang, Zhenyu Yang, Zhipeng Hu, Minlie Huang
North American Chapter of the Association for Computational Linguistics (NAACL), 2022. (***Oral***)

[6] **DiscoDVT: Generating Long Text with Discourse-Aware Discrete Variational Transformer**
Haozhe Ji, Minlie Huang
Empirical Methods in Natural Language Processing (EMNLP), 2021. (***Oral***)

[7] **Jointgt: Graph-text joint representation learning for text generation from knowledge graphs**
Pei Ke, **Haozhe Ji**, Yu Ran, Xin Cui, Liwei Wang, Linfeng Song, Xiaoyan Zhu, Minlie Huang
Findings of the Association for Computational Linguistics (Findings of ACL), 2021.

[8] **Language generation with multi-hop reasoning on commonsense knowledge graph**
Haozhe Ji, Pei Ke, Shaohan Huang, Furu Wei, Xiaoyan Zhu, Minlie Huang
Empirical Methods in Natural Language Processing (EMNLP), 2020. (***Oral***)

[9] **Generating commonsense explanation by extracting bridge concepts from reasoning paths**
Haozhe Ji, Pei Ke, Shaohan Huang, Furu Wei, Minlie Huang
Asia-Pacific Chapter of the Association for Computational Linguistics (AACL), 2020.

[10] **Sentilare: Linguistic knowledge enhanced language representation for sentiment analysis**
Pei Ke*, **Haozhe Ji***, Siyang Liu, Xiaoyan Zhu, Minlie Huang
Empirical Methods in Natural Language Processing (EMNLP), 2020.

[11] **Denoising distantly supervised open-domain question answering**
Yankai Lin, **Haozhe Ji**, Zhiyuan Liu, Maosong Sun
Annual Meeting of the Association for Computational Linguistics (ACL), 2018.

Research Experience

CoAI Lab, **Tsinghua University** — September 2020 - July 2025 (Expected)
Ph.D. Candidate (Supervisor: Minlie Huang)

Natural Language Comupting group, **Microsoft Research Asia** — July 2019 - July 2020
Research Intern (Supervisors: Shaohan Huang, Furu Wei)

Services

Reviewer/Program Committee: ACL, EMNLP, NAACL, ARR

Awards

Tang Junyuan (唐君远) **Scholarship**, Tsinghua University	2023
Sohu Scholarship, Tsinghua University	2022
Yang Huiyan (杨惠妍) **Scholarship**, Tsinghua University	2021
Comprehensive Merit Scholarship, Tsinghua University	2019
Comprehensive Merit Scholarship, Tsinghua University	2017
Gold Medal, 32nd China Physics Olympiads (CPhO)	2015
Distinguished Honor Roll (Top 1%), American Mathematics Contest 12 (AMC12)	2015