

Qianyu He

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RESEARCH INTEREST

Qianyu He (何千羽) is currently a third-year PhD candidate at Fudan University in the School of Computer Science, Shanghai, China. Her previous work focused on the **Creative Generation of Language Models**:

- ◇ **Creative Generation**: Integrating linguistic theory and commonsense knowledge into language model understanding and generation, with an emphasis on figurative language. The aim is to enable language models to generate creative responses reflecting human cognition, such as similes and metaphors.

Currently, her interested research topics are mostly around the **Enhancement of Large Language Models (LLMs)' Instruction Following and Reasoning ability**:

- ◇ **Instruction Following**: Developing advanced methods for LLMs to understand complex instructions, particularly those with multiple constraints (e.g., format, semantic constraints). The aim is to enhance LLMs' understanding of diverse and complex human instructions, enabling them to excel in practical applications beyond traditional NLP tasks.
- ◇ **Mathematical Reasoning**: Improving LLMs' reasoning ability fundamentally without external support, with an emphasis on mathematical reasoning. This involves enhancing foundational skills of complex reasoning tasks, such as numerical computation and unit conversion through training.

EDUCATION

- Fudan University** (Shanghai). Ph.D. in School of Computer Science 2021 - 2026 (estimated)
- Shanghai Key Laboratory of Data Science, Knowledge Works Laboratory. *Advisor: Prof. Yanghua Xiao*
- Fudan University** (Shanghai). B.S. in School of Computer Science 2017 - 2021
- Shanghai Key Laboratory of Data Science, Knowledge Works Laboratory. *Advisor: Prof. Yanghua Xiao*

SELECTED PUBLICATIONS

[*: Equal Contribution]

- [1] [From Complex to Simple: Enhancing Multi-Constraint Complex Instruction Following Ability of Large Language Models](#)
Qianyu He*, Jie Zeng*, Qianxi He, Jiaqing Liang, Yanghua Xiao
Long paper, Preprint, 2024
- [2] [Laying the Foundation First? Investigating the Generalization from Atomic Skills to Complex Reasoning Tasks](#)
Yuncheng Huang, Qianyu He, Yipei Xu, Jiaqing Liang, Yanghua Xiao
Long paper, Preprint, 2024
- [3] [Can Large Language Models Understand Real-World Complex Instructions?](#)
Qianyu He, Jie Zeng, Wenhao Huang, Lina Chen, Jin Xiao, Qianxi He, Xunzhe Zhou, Jiaqing Liang, Yanghua Xiao
Long paper, in: **AAAI 2024**
- [4] [Enhancing Quantitative Reasoning Skills of Large Language Models through Dimension Perception](#)
Yuncheng Huang, Qianyu He, Jiaqing Liang, Sihang Jiang, Yanghua Xiao, Yunwen Chen
Long paper, in: **ICDE 2024**
- [5] [HAUSER: Towards Holistic and Automatic Evaluation of Simile Generation](#)
Qianyu He, Yikai Zhang, Jiaqing Liang, Yuncheng Huang, Yanghua Xiao, Yunwen Chen
Long paper, in: **ACL 2023**
- [6] [MAPS-KB: A Million-scale Probabilistic Simile Knowledge Base](#)
Qianyu He, Xintao Wang, Jiaqing Liang, Yanghua Xiao
Long paper, in: **AAAI 2023**
- [7] [Can Pre-trained Language Models Interpret Similes as Smart as Human?](#)
Qianyu He*, Sijie Cheng*, Zhixu Li, Rui Xie, Yanghua Xiao.
Long paper, in: **ACL 2022**

COMPLETE PUBLICATIONS

- [1] Reason from Fallacy: Enhancing Large Language Models' Logical Reasoning through Logical Fallacy Understanding
Yanda Li, Dixuan Wang, Jiaqing Liang, Deqing Yang, Guochao Jiang, Qianyu He, Yanghua Xiao
Long paper, in: **NAACL 2024 Findings**
- [2] *Is There a One-Model-Fits-All Approach to Information Extraction? Revisiting Task Definition Biases*
Wenhao Huang, Qianyu He, Zhixu Li, Jiaqing Liang, Yanghua Xiao
Long paper, Preprint, 2024
- [3] Light Up the Shadows: Enhance Long-Tail Entity Grounding with Concept-Guided Vision-Language Models
Yikai Zhang, Qianyu He, Xintao Wang, Siyu Yuan, Jiaqing Liang, Yanghua Xiao
Long paper, Preprint, 2024
- [4] *Small Model Can Self-correct*
Haixia Han, Jiaqing Liang, Jie Shi, Qianyu He, Yanghua Xiao
Long paper, in: **AAAI 2024**
- [5] *A Context-Enhanced Generate-then-Evaluate Framework for Chinese Abbreviation Prediction*
Hanwen Tong, Chenhao Xie, Jiaqing Liang, Qianyu He, Zhiang Yue, Jingping Liu, Yanghua Xiao, Wenguang Wang
Long paper, in: **CIKM 2023**
- [6] *BBT-Fin: Comprehensive Construction of Chinese Financial Domain Pre-trained Language Model, Corpus and Benchmark*
Dakuan Lu, Jiaqing Liang, Yipei Xu, Qianyu He, Yipeng Geng, Mengkun Han, Yingsi Xin, Hengkui Wu, Yanghua Xiao
Long paper, Preprint, 2023
- [7] *Language Models as Knowledge Embeddings*
Xintao Wang, Qianyu He, Jiaqing Liang, Yanghua Xiao.
Long paper, in: **IJCAI 2022**

PROJECTS

Chinese Large Language Model CuteGPT-13B Training

2023.04 - 2023.08

- Led a five-person team in developing an instruction tuning pipeline for LLMs, covering data collection, cleaning, model training, evaluation, and deployment.
- Primarily responsible for analyzing data ratios, refining training strategies, and evaluating models.
- Our pipeline facilitated the development of chatbots and downstream applications for government and corporations.

SELECTED AWARDS

Intel Fellowship (5 Ph.D. candidates in Fudan University)	2023
Outstanding Academic Scholarship for Master Students (Top 5%)	2022
Outstanding Graduates in Shanghai	2021
China National Scholarship (Top 1%)	2020

ACADEMIC SERVICE

Reviewer of ACL Rolling Review (2023, 2024)