

Gaole He

Curriculum Vitae

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📄 <https://richardhgl.github.io/>

Background and Research Interests

In my master program, I primarily focused on deep learning techniques for graph representation learning and reasoning, and on intelligent applications with relational knowledge bases, such as *knowledge base question answering*, *knowledge graph completion*, and *knowledge-based recommender systems*.

My current research focuses on:

- Collecting necessary human knowledge (e.g., commonsense knowledge) to improve AI systems and generate explanations
- Designing effective explanation methods (e.g., using analogy) to facilitate human-AI collaboration (target users: laypeople, non-experts)
- Analyzing user factors (e.g., expertise, mindset) in shaping trust and reliance in human-AI collaboration.

Education Qualifications

Jul 2021 - **Ph.D candidate**, *Computer Science*, Delft University of Technology, Delft, Netherlands. Supervised by [Ujwal Gadiraju](#) and [Geert-Jan Houben](#).

Topics: Human-centered XAI, Commonsense Knowledge, Human-AI Collaboration

2018 - 2021 **M.Sc.**, *Computer Science*, Renmin University of China, Beijing, China, supervised by [Wayne Xin Zhao](#) and [Ji-Rong Wen](#).

Topics: Knowledge Base, Natural Language Processing, Deep Learning

2014 - 2018 **B.Sc.**, *Computer Science and Mathematics (minor)*, Renmin University of China, Beijing, China, supervised by [Wayne Xin Zhao](#).

Topics: Network Embedding, Recommender System

Academic Experience

Internship Experience

Nov 2019 - Research Assistant, supervised by [Jing Jiang](#), [Yunshi Lan](#) in Living Analytics

Aug 2020 Research Center, Singapore Management University (SMU). Topics: Knowledge Base Question Answering (KBQA).

Teaching Experience

Sep 2022 - Teaching Assistant, Seminar Web Information System. Delft University of

Nov 2022 Technology. Main responsibility: mentoring master students for literature review.

- Jan 2022 - Master thesis daily supervisor, Delft University of Technology. Main responsibility: providing research ideas, weekly mentoring, and teaching academic skills.
- Abri Bharos (Feb 2022 - Dec 2022), Human-AI Decision Making with XAI
 - Lucie Kuiper (Jan 2022 - Nov 2022), Human-AI Decision Making with XAI
- Sep 2018 - Student Advisor, Renmin University of China, Turning class. Main responsibility:
- Jun 2020 Freshman Guide.
- [Professional Service](#)
- PC reviewer: CCL 2022
 - Reviewer/sub-reviewer: KDD 2021, WWW 2022, CSCW 2023
 - Journal Reviewer: Frontiers in Artificial Intelligence; Behaviour & Information Technology

Selected Publications

* indicates equal contribution. Only selected papers are presented here. For full list of publications, please refer to my [google scholar page](#).

Conference Papers

- HCOMP 2022 **Gaole He**, Agathe Balayn, Stefan Buijsman, Jie Yang, Ujwal Gadiraju. It Is Like Finding a Polar Bear in the Savannah! Concept-level AI Explanations with Analogical Inference from Commonsense Knowledge. *The Tenth AAAI Conference on Human Computation and Crowdsourcing*. **Best Paper Award**.
- WWW 2022 Agathe Balayn*, **Gaole He***, Andrea Hu*, Jie Yang, Ujwal Gadiraju. Ready Player One! Eliciting Diverse Knowledge Using A Configurable Game. *Proceedings of The Web Conference 2022*. **Best Paper Candidate (1/11), honorable nomination**.
- IJCAI 2021 Yunshi Lan*, **Gaole He***, Jinhao Jiang, Jing Jiang, Wayne Xin Zhao, Ji-Rong Wen. A Survey on Complex Knowledge Base Question Answering: Methods, Challenges and Solutions. *The 30th International Joint Conference on Artificial Intelligence (IJCAI-21), Survey Track*.
- WSDM 2021 **Gaole He**, Agathe Balayn, Stefan Buijsman, Jie Yang, Ujwal Gadiraju. Improving Multi-hop Knowledge Base Question Answering by Learning Intermediate Supervision Signals. *14th ACM International Conference on Web Search and Data Mining*.
- WWW 2020 **Gaole He**, Junyi Li, Wayne Xin Zhao, Peiju Liu and Ji-Rong Wen. Mining Implicit Entity Preference from User-Item Interaction Data for Knowledge Graph Completion via Adversarial Learning. *Proceedings of The Web Conference 2020*.

Journal Papers

- Data Intelligence 2019 Wayne Xin Zhao, **Gaole He**, Kunlin Yang, Hong-Jian Dou, Jin Huang, Siqu Ouyang and Ji-Rong Wen. KB4Rec: A Data Set for Linking Knowledge Bases with Recommender Systems. *Data Intelligence, 2019: 121–136*.

Demo Papers

- HCOMP 2021 Agathe Balayn*, **Gaole He***, Andrea Hu*, Jie Yang, Ujwal Gadiraju. Find-ItOut: A Multiplayer GWAP for Collecting Plural Knowledge. *The ninth AAAI Conference on Human Computation and Crowdsourcing*. **Best Poster/Demo award**.
- ACL 2021 Junyi Li*, Tianyi Tang*, **Gaole He**, Jinhao Jiang, Xiaoxuan Hu, Puzhao Xie, Zhipeng Chen, Zhuohao Yu, Wayne Xin Zhao, Ji-Rong Wen. TextBox: A Unified, Modularized, and Extensible Framework for Text Generation. *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing: System Demonstrations*.


Selected Honors, Awards, & Recognitions

- HCOMP Best Paper, 2022
- WWW Best Paper Nomination, 2022
- HCOMP Best Demo, 2021
- Excellent Graduate in Beijing, 2021
- Student Travel Award in WSDM, 2021
- JingDong Scholarship, 2020
- First-Class scholarship for postgraduate student, 2018, 2019
- Excellent Graduate in Renmin University of China, 2018
- Sa Elite Scholarship, 2016
- American College Mathematical Modeling Contest Meritorious Winner, 2016

Technical and Personal Skills

- Language: Chinese, English
- Programming: Python, Pytorch, Java, C/C++
- Familiar with deep learning, graph embedding, and graph neural networks (3 years in master program)
- Familiar with academic writing
- Basic statistical analysis in human studies (HCI)
- Basic interface development: Flask, Javascript, Bootstrap

Open Sourced Project

I keep the habit of sharing the data and code in my research projects / published papers on Github. Please refer to my  [Github](#) homepage for my projects. I list some representative projects as following:

- [Neural State Machine in KBQA](#) (92 star on Github). Role: main developer.
- [KB4Rec](#) (284 star on Github). Role: main developer.
- [TextBox](#) (409 star on Github). Role: main developer in initial version.