Gaole He

Curriculum Vitae

Latest Update: Mar-31-2024
Building 28, 2628 XE Delft, the Netherlands
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Research Interests

My current research focuses on:

- Exploring how **Large Language Models (LLMs)** can collaborate with humans to boost work efficiency and optimize workflow.
- Analyzing user factors (e.g., **cognitive bias**) in shaping **trust and reliance** in human-AI collaboration.
- Designing effective explanation methods (e.g., using **analogy**) to facilitate human-AI collaboration (target users: laypeople, non-experts)
- Collecting necessary human knowledge (e.g., **commonsense knowledge**) to improve AI systems and generate explanations

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-AI Collaboration, Human-centered XAI

2018 - 2021 **M.E**, *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.E**, *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 - Aug 2020 Research Assistant, supervised by Jing Jiang, Yunshi Lan in Living Analytics Research Center (LARC), Singapore Management University (SMU).

Feb 2024 - May 2024 Visiting PhD Researcher, supervised by Gianluca Demartini in The ARC Centre for Information Resilience (CIRES), the University of Queensland (UQ).

Teaching Experience

- CS4360, Natural Language Processing, mater course, teaching assistant, 2023.
- CS4145, Crowd Computing, master course, teaching assistant, 2022, 2023.
- IN4326, Seminar Web Information Systems, master course, teaching assistant, 2022, 2023.

- Master thesis supervisor. Every year, I mentor at least two master students for thesis projects (around 9 months). The mentorship includes weekly meetings, technical support, and academic writing. Some excellent work will finally result in a top-tier conference/journal publication. 2022- Now
- Student supervisor for Turing class of Information School, Renmin University of China, 2018 - 2020

Professional Service

- Reviewer/sub-reviewer: KDD 2021, WWW 2022, CCL 2022 - 2023, SIGIR 2023, HCOMP 2023, CSCW 2023 - 2024, CHI 2024
- Journal Reviewer: JAIR; JETAI; Frontiers in Artificial Intelligence; Behaviour & Information Technology; Information Processing and Management (IPM); ACM Computing Surveys (CSUR)
- Workshop Organizer: CSCW 2023 Workshop on Understanding and Mitigating Cognitive Biases in Human-AI Collaboration

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

CSCW 2023 **Gaole He***, Stefan Buijsman*, Ujwal Gadiraju. How Stated Accuracy of an AI System and Analogies to Explain Accuracy Affect Human Reliance on the System.

CHI 2023 **Gaole He**, Lucie Kuiper, Ujwal Gadiraju. Knowing About Knowing: An Illusion of Human Competence Can Hinder Appropriate Reliance on AI Systems.

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. 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. Best Paper Candidate (3.4% of accepted papers), 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.

WSDM 2021 **Gaole He**, Agathe Balayn, Stefan Buijsman, Jie Yang, Ujwal Gadiraju. Improving Multi-hop Knowledge Base Question Answering by Learning Intermediate Supervision Signals.

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.

Journal Papers

TKDE 2022 Yunshi Lan*, **Gaole He***, Jinhao Jiang, Jing Jiang, Wayne Xin Zhao and Ji-Rong Wen. Complex Knowledge Base Question Answering: A Survey.

Selected Honors, Awards, & Recognitions

- Selected to attend Heidelberg Laureate Forum 10th, 2023
- Gary Marsden Travel Award for CHI'23, 2023
- HCOMP Best Paper, 2022
- WWW Best Paper Nomination, 2022
- HCOMP Best Demo, 2021
- Excellent Graduate in Beijing (Highest honor for graduate set by the government of Beijing), 2021
- JingDong Scholarship, 2020
- First-Class scholarship for postgraduate student, 2018, 2019
- 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 (113 star on Github). Role: main developer.
- KB4Rec (308 star on Github). Role: main developer.
- TextBox (1k star on Github). Role: main developer in initial version.