

Xiaoyu Guo

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Employment

Australian Institute for Machine Learning (AIML)

Adelaide, Australia

Research Fellow / Postdoc Position

Nov. 2023 ~ Now

Research Topics: Model Robustness, Uncertainty and Faithfulness Estimation

Supervisor: [Ehsan Abbasnejad](#)

Education

Monash University

Melbourne, Australia

Doctor of Philosophy

Mar. 2020 ~ Mar. 2024

Research Topics: Natural Language Processing, Complex Question Answering and Reasoning

Supervisors: [Yuan-Fang Li](#), [Gholamreza Haffari](#)

Beihang University

Beijing, China

Master of Engineering

Sep. 2016 ~ Jan. 2019

Major: Computer Science and Technology

Weighted average grade: 90.4% (GPA: 3.8/4)

Supervisor: [Hui Zhang](#)

Beihang University

Beijing, China

Bachelor of Engineering

Sep. 2012 ~ June 2016

Major: Computer Science and Technology

Weighted average grade: 86.6% (GPA: 3.6/4)

Publications

First Author (Question Answering, Natural Language Generation, Relation Classification)

- **Xiao-Yu Guo**, Yuan-Fang Li, and Gholamreza Haffari. 2023. **DeSIQ: Towards an Unbiased, Challenging Benchmark for Social Intelligence Understanding**. In Proceedings of EMNLP 2023
- **Xiao-Yu Guo**, Yuan-Fang Li, and Gholamreza Haffari. **Complex Reading Comprehension Through Question Decomposition**. In Proceedings of the 20th ALTA, 2022, pages 31–40.
- **Xiao-Yu Guo**, Yuan-Fang Li, and Gholamreza Haffari. **Improving Numerical Reasoning Skills in the Modular Approach for Complex Question Answering on Text**. In Findings of the EMNLP 2021, pages 2713–2718.
- **Xiaoyu Guo**, Yuan-Fang Li, and Gholamreza Haffari. **Understanding Unnatural Questions Improves Reasoning over Text**. In Proceedings of the 28th International Conference on Computational Linguistics (COLING), 2020, pages 4949–4955.
- **Xiaoyu Guo**, Meng Chen, Yang Song, Xiaodong He, and Bowen Zhou. **Automated Thematic and Emotional Modern Chinese Poetry Composition**. In Proceedings of the 8th NLPCC 2019, Part I 8 (pp. 433–446).
- **Xiaoyu Guo**, Hui Zhang, Haijun Yang, Lianyuan Xu, and Zhiwen Ye, **A Single Attention-Based Combination of CNN and RNN for Relation Classification**. In IEEE Access, vol. 7, pp. 12467–12475, 2019.
- **Xiaoyu Guo**, Hui Zhang, Rui Liu, Xin Ding, Runqi Tian, and Bencheng Wang, **Attention-Based Combination of CNN and RNN for Relation Classification**. In: Neural Information Processing. ICONIP 2018. vol 11304.

Others (Question Answering, Natural Language Generation, Entity Linking)

- Jiayi Chen, **Xiao-Yu Guo**, Yuan-Fang Li, and Gholamreza Haffari. **Teaching Neural Module Networks to Do Arithmetic**. In Proceedings of the 29th International Conference on Computational Linguistics (COLING), pages 1502–1510.
- Lei Shen, **Xiaoyu Guo**, and Meng Chen. **Compose like humans: Jointly improving the coherence and novelty for modern chinese poetry generation**. In 2020 international joint conference on neural networks (IJCNN), pp. 1-8.
- Ruixue Liu, Baoyang Chen, **Xiaoyu Guo**, Meng Chen, Zhijie Qiu, and Xiaodong He. **Another AI? Artificial imagination for artistic mind map generation**. International Journal of Multimedia Data Engineering and Management (IJMDEM) 10, no. 3 (2019): 47–63
- Ruixue Liu, Baoyang Chen, **Xiaoyu Guo**, Yan Dai, Meng Chen, Zhijie Qiu, and Xiaodong He, **From Knowledge Map to Mind Map: Artificial Imagination**. 2019 IEEE Conference on Multimedia Information Processing and Retrieval (MIPR), pp. 496–501.

- Ding, Xin, Hui Zhang, and Xiaoyu Guo. **An unsupervised framework for author-paper linking in bibliographic retrieval system.** In 2018 14th International Conference on Semantics, Knowledge and Grids (SKG), pp. 152-159. IEEE, 2018.

Professional Practice

Computational Cultural Understanding Project (Research Assistant)

Research on Social Intelligence and Human Interactions

Feb. 2022 ~ July 2023

- **Norm Detection and Discovery.** Without labeled data, build models to classify social norms (like greetings, apology, etc.) based on Chinese culture. Multimodal inputs including videos, audios and transcripts are employed.
- **Social Intelligence Question Answering.** Based on the Social-IQ benchmarks, focus on fusion and reasoning over multimodal data. Right before this, propose a methodology on dataset bias detection and debiasing. Submit one academic paper for EMNLP 2023.

JD AI (Internship)

Research on Natural Language Generation (NLG)

July 2018 ~ May 2019

- **Modern Chinese Poetry Generation.** To generate more coherent, expressive, and thematic poems, incorporate human emotions and topics into poetry generation procedure. Based on seq2seq+att model, carry out experiments on millions of poems and prepare an academic paper for CoNLL 2019.
- **Modern Chinese Poetry Refinement.** Based on the work pervious bullet point mentioned, generate-then-refine poems according to human minds by adding encoders encoding useful poem lines.
- **Knowledge Driven Dialogue System.** Leveraging information in knowledge graph, use OpenNMT (an open-source structure) to generate multi-turn dialogue between machines and humans.

State Key Laboratory of Software Development Environment, Beihang University

Research on Relation Classification (RC)

Mar. 2018 ~ Jan. 2019

- **RC Model.** Build a novel RC model using the combination of RNN and CNN, conduct experiments on SemEval-2010 task 8 dataset and get the highest F1 score compared to previous literatures.
- **Refined RC Model.** Based on the work previously mentioned, slightly modify the RC model and extend the datasets (SemEval-2018 task 7 and KBP37) and publish a paper in IEEE Access.

Project on Kejsa Search Engine (website: <http://www.kejsa.com>)

Sep. 2017 ~ Oct. 2018

- **Knowledge Graph.** Establish academic portraits of Chinese researchers based on their publications.
- **Information Retrieval.** Promote ranking algorithm, improve the effectiveness of the Kejsa system.

Project on NSFC (National Natural Science Foundation of China)

Aug. 2016 ~ Jan. 2018

- **Search Engine.** Build up a distributed search engine based on Solr, improve searching accuracy.
- **NER.** add NER of organizations and scientific terminologies.

Scholarship & Honor

Outstanding Postgraduate Student in Beijing	Jan. 2019
Outstanding Postgraduate Student in Beihang University (20 out of 235)	Mar. 2018
Second Price Scholarship in Beihang University	Oct. 2017
Outstanding Undergraduate Student in Beihang University	June 2016
Outstanding Student Leader in Beihang University	Oct. 2015
Learning Outstanding Scholarship in Beihang University	Dec. 2014

Competition Reward

"First Price" in Asia Student Supercomputer Challenge, 2015	May 2015
CCF Score: 300, Ranking: 5.73%	Nov. 2014

Association Participation & Volunteering

SCSE 120615 class monitor in Beihang University	Sep. 2014 ~ July 2015
INCLUDED volunteer (Service Dates: July 14~July 25)	July 2014