Xiaoyu Guo

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TOEFL: 102 (R:30/L:28/S:22/W:22)

Education

Monash University — **Melbourne, Australia**
Doctor of Philosophy — **Mar. 2020 ~ Now**
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. **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 novel RC model using the combination of RNN and CNN, conduct experiments on SemEval-2010 task 8 dataset and get 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 Kejso Search Engine (website: http://www.kejso.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 Kejso system.

Project on NSFC (National Natural Science Foundation of China) **Aug. 2016 ~ Jan. 2018**

- **Search Engine.** Build up 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**