

# Ranran Haoran Zhang

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## RESEARCH INTERESTS

My research interests lie in making better use of **available** and **unavailable** data to develop better model, e.g.,

- With millions of data, millions of annotators, is it exhaustive enough to train a strong specialized model?
- What strategies can be employed to unify diverse labeled datasets for training universal models across multiple tasks?
- When combining heterogeneous datasets, how can we maintain and verify data quality and consistency?

I'm also interested in the applications of LLMs in Computer Science Education (CSEdu), and use the CSEdu theory to develop better CodeLLMs datasets.

## EDUCATION

*Ph.D. Computer Science and Engineering* Jan. 2022 - Present  
**Penn State University**  
Advisor: Dr. Rui Zhang

*M.S. Information Management* Aug. 2019 - May. 2021  
**University of Illinois Urbana-Champaign**  
Advisor: Dr. Heng Ji

*B.S. Computer Science and Technology* Sep. 2014 - Jun. 2018  
**Changsha University of Science & Technology**  
Thesis: Intent Classification Based on Pattern Engine  
Advisor: Dr. Daojian Zeng

## EXPERIENCE

*R & D Intern* Sep. 2023 - Apr. 2024  
eBay, Remote  
Project: Advertising Keyphrase Generation

- Low-latency Seq2Seq model to generate infinite number of keyphrases from a finite annotated dataset.
- Paper & Product-driven development.

*Team Lead* Jan. 2023 - Aug. 2023  
Amazon, Remote  
Project: Task-Oriented Multimedia Chatbot

- Team lead of 12 members for 8 months, working on NLP, Multidemia and MLOps.

*R & D Intern* Aug. 2021 - Nov. 2021  
Benten Tech, Remote  
Project: Chatbot for Alzheimer's Caregiver

- Information Retrieval based FAQ module.
- Neural based chitchat module with long-term memory.

- Deployed on Alexa Skill.

## MANUSCRIPT

- [2]. **Ranran Haoran Zhang**, Bensu Uçar, Soumik Dey, Hansi Wu, Binbin Li, Rui Zhang. “Positive-Unlabeled Sequence Learning for Extreme Multi-label Classification with Missing Labels”. Under-review by ACL ARR 2024 April.
- [1]. Ryo Kamoi, Sarkar Snigdha Sarathi Das, Renze Lou, Jihyun Janice Ahn, Yilun Zhao, Xiaoxin Lu, Nan Zhang, Yusen Zhang, **Ranran Haoran Zhang**, Sujeeth Reddy Vummanthala, Salika Dave, Shaobo Qin, Arman Cohan, Wenpeng Yin, Rui Zhang. “Evaluating LLMs at Detecting Errors in LLM Responses”. Under-review COLM 2024

## PUBLICATIONS \* indicates equal contribution

- [8]. **Ranran Haoran Zhang**, Parker Sell , Yusen Zhang , Liwei Che , Allen Gao, Sathiyajith K S , Rishabh Bhatt , Piyush Nagasubramaniam , Sujeeth Vummanthala, Salika Dave , Harsh Maniar , Vishnu Dasu , Rui Zhang. “EvoquerBot: A Multimedia Chatbot Leveraging Synthetic Data for Cross-Domain Assistance”. Alexa Prize TaskBot Challenge 2 Proceedings.
- [7]. Sarkar Snigdha Sarathi Das, **Ranran Haoran Zhang**, Peng Shi, Wenpeng Yin, Rui Zhang. “Unified Low-Resource Sequence Labeling by Sample-Aware Dynamic Sparse Finetuning”. EMNLP 2023.
- [6]. Aysa Xuemo Fan, **Ranran Haoran Zhang**, Luc Paquette, Rui Zhang. “Exploring the Potential of Large Language Models in Generating Code-Tracing Questions for Introductory Programming Courses”. EMNLP 2023 Findings.
- [5]. **Ranran Haoran Zhang**, Aysa Xuemo Fan, Rui Zhang. “ConEntail: An Entailment-based Framework for Universal Zero and Few Shot Classification with Supervised Contrastive Pretraining”. EACL 2023.
- [4]. Qingyun Wang, Manling Li, Xuan Wang, Nikolaus Parulian, Guangxing Han, Jiawei Ma, Jingxuan Tu, Ying Lin, **Ranran Haoran Zhang**, Weili Liu, Aabhas Chauhan, Yingjun Guan, Bangzheng Li, Ruisong Li, Xiangchen Song, Heng Ji, Jiawei Han, Shih-Fu Chang, James Pustejovsky, David Liem, Ahmed Elsayed, Martha Palmer, Jasmine Rah, Cynthia Schneider, Boyan Onyshkevych. “COVID-19 Literature Knowledge Graph Construction and Drug Repurposing Report Generation“. NAACL’2021 Demo. Best Demo Award.
- [3]. **Ranran Haoran Zhang\***, Qianying Liu\*, Aysa Xuemo Fan, Heng Ji, Daojian Zeng, Fei Cheng, Daisuke Kawahara and Sadao Kurohashi. “Minimize Exposure Bias of Seq2Seq Models in Joint Entity and Relation Extraction”. EMNLP 2020-Findings.
- [2]. Daojian Zeng\*, **Ranran Haoran Zhang\***, Qianying Liu. “CopyMTL: Copy Mechanism for Joint Extraction of Entities and Relations with Multi-Task Learning”. AAAI 2020.
- [1]. Daojian Zeng, **Ranran Haoran Zhang**, Lingyun Xiang, Jin Wang, Guoliang Ji. “User-oriented paraphrase generation with keywords controlled network”. IEEE Access 2019

## HONORS AND AWARDS

NAACL Best Demo Paper

2021

<b>SERVICES</b>	Reviewer, ACL-ARR	2023, 2024
	Reviewer, ICLR.	2024
	Reviewer, NeurIPS.	2023
	Reviewer, EMNLP.	2022, 2023
	Reviewer, COLING.	2022
	Reviewer, JMLC.	2021

**PROFESSIONAL REFERENCE** Rui Zhang, Ph.D.  
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Penn State University.  
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