Ziru "Ron" Chen
Curriculum Vitae
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INTERESTS	Natural Language Processing, Conversational AI, Human-Computer Interaction

EDUCATION

The Ohio State University, Columbus, OH — Aug 2022 – May 2027
Ph.D. Computer Science and Engineering — **GPA: 4.0 / 4.0**

The Ohio State University, Columbus, OH — Aug 2018 – May 2022
B.S. Computer and Information Science, Math Minor — **GPA: 3.97 / 4.0**
Summa Cum Laude

EXPERIENCES

Research Assistant, The Ohio State University — Dec 2020 – Present
Advisor: Dr. *Huan Sun*
Visiting Student Research Intern, Westlake University — May – Jul 2021
Advisor: Dr. *Zhenzhong Lan*
Student Instructional Assistant, The Ohio State University
Aug 2019 – Dec 2020; Aug 2021 – May 2022

HONORS

University Fellowship, The Ohio State University — 2022–2023, 2026–2027
3rd Place (Student Co-lead), 1st Alexa Prize Taskbot Challenge — 2022
Undergraduate Research Award, The Ohio State University — 2022
CIS Undergrad Scholarship, The Ohio State University — 2021
Dean's List, The Ohio State University (6 semesters) — 2018–2021

RESEARCH

Interactive Natural Language Interface to Databases — Jun 2022 – Present
Designed a novel interactive semantic parsing framework for cross-domain Text-to-SQL systems. Developed an error correction model that can improve the execution accuracy of different parsers by up to **5.4%** without any interaction. When database users interact with the suggested corrections in our framework, a system can reach **81.2%** overall accuracy. Currently exploring the potential of using large language models to build a better interactive natural language interface to databases.

Measuring Answer Attribution of Large Language Models — Apr 2023 – Present
Reproduced Stanford Alpaca training and tested the model's zero-shot ability to attribute language models' answers to their retrieved references. Fine-tuned Roberta, Flan-T5, and GPT-2 on our simulated training data for answer attribution. Showed that Flan-T5 can outperform Alpaca by **10.6%** and ChatGPT by **7.5%** on the automatic answer attribution task.

Chain-of-Thought Style Prompting for Text-to-SQL Parsing — Dec 2022 – May 2023
Proposed to explore chain-of-thought style prompting to better leverage large language models (Codex) for text-to-SQL parsing. Experimented with three kinds of chain-of-thought style prompting methods to enhance Codex's multi-step reasoning ability and studied their robustness. Improved Codex's text-to-SQL paring accuracy by **5.2%**.

TacoBot: 1st Alexa Prize Taskbot Challenge — Jun 2021 – Jun 2022
Co-led the OSU Tacobot team. Designed the overall dialogue system architecture and finite state machine for dialogue management. Developed a pipeline to extract and simplify information in structured documents (Wikihow articles and Wholefoods recipes). Implemented retrieval-based response generation and three user engagement features. Achieved **3rd place out of 125 applications**.

PUBLICATIONS

[7] *Automatic Evaluation of Attribution by Large Language Models*
Xiang Yue, Boshi Wang, Kai Zhang, **Ziru Chen**, Yu Su, Huan Sun
Arxiv Preprint (2023, Long)

[6] *Error Detection for Text-to-SQL Semantic Parsing*
Shijie Chen, **Ziru Chen**, Huan Sun, Yu Su
Arxiv Preprint (2023, Long)

[5] *Exploring Chain-of-Thought Style Prompting for Text-to-SQL*
Chang-You Tai, **Ziru Chen**, Tianshu Zhang, Xiang Deng, Huan Sun
Arxiv Preprint (2023, Long)

[4] *Roll Up Your Sleeves: Working with a Collaborative and Engaging Task-Oriented Dialogue System*
Lingbo Mo, Shijie Chen, **Ziru Chen**, Xiang Deng, Ashley Lewis, Sunit Singh, Samuel Stevens, Chang-You Tai, Zhen Wang, Xiang Yue, Tianshu Zhang, Yu Su, Huan Sun
The 24th Meeting of the Special Interest Group on Discourse and Dialogue (SIGDIAL 2023, Demo)

[3] *Text-to-SQL Error Correction with Language Models of Code*
Ziru Chen, Shijie Chen, Michael White, Raymond Mooney, Ali Payani, Jayanth Srinivasa, Yu Su, Huan Sun
The 61st Annual Meeting of the Association for Computational Linguistics (ACL 2023, Short)

[2] *Error Detection for Interactive Text-to-SQL Semantic Parsing*
Shijie Chen, **Ziru Chen**, Huan Sun, Yu Su
The 2nd Workshop on Interactive Learning for Natural Language Processing (InterNLP 2022, Short)

[1] *Bootstrapping a User-Centered Task-Oriented Dialogue System*
Shijie Chen*, **Ziru Chen***, Xiang Deng, Ashley Lewis, Lingbo Mo, Samuel Stevens, Zhen Wang, Xiang Yue, Tianshu Zhang, Yu Su, Huan Sun (* equal contribution)
The 1st Proceedings of Alexa Prize Taskbot Challenge (Alexa Prize 2022, Long)

TEACHING

CSE 5525 Speech and Language Processing, Undergraduate & Graduate Level
Teaching Assistant, The Ohio State University (Autumn 2021; Spring 2022)

CSE 2321 Foundations I: Discrete Structures, Undergraduate Level
Teaching Assistant, The Ohio State University (Autumn 2019; Spring, Autumn 2020)

SERVICE

Program Committee: AAAI 2023

SKILLS

Programming
Python, C, Java, MATLAB, HTML and CSS, Ruby, JavaScript
Languages
*Chinese (Native), English (Fluent), Japanese (Proficient; **JLPT N2**), Korean (Elementary)*

REFERENCES

Huan Sun, Ph.D.
Associate Professor, Department of Computer Science and Engineering
The Ohio State University
NSF CAREER Award (2020), Google Research Scholar Award (2022)
Email: sun.397@osu.edu
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Yu Su, Ph.D.
Distinguished Assistant Professor of Inclusive Excellence, Department of Computer Science and Engineering
The Ohio State University / Microsoft Semantic Machines
NSF ICICLE Institute AI Team Lead
Email: su.809@osu.edu
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Michael White, Ph.D.
Professor, Department of Linguistics
The Ohio State University
Lumley Interdisciplinary Research Award (2022)
Email: white.1240@osu.edu
Website: https://u.osu.edu/white.1240/