

# SHUAICHEN CHANG

Amazon Web Services AI Lab

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## EMPLOYMENT

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### Amazon Web Services AI Lab

Aug 2023 - Present

Applied Scientist II

Founding member of the AWS Bedrock RAG and Agentic AI science team.

Research Interest: Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Agentic AI and Computer-Use Agents, Text-to-SQL, Robustness and Evaluation, Tabular Representation Learning, Vision and Language

## EDUCATION

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### The Ohio State University

Aug 2017 - Aug 2023

Ph.D. in Computer Science and Engineering

### Fudan University

Sep 2013 - Jun 2017

Bachelor in Computer Science and Technology, Outstanding Student Honor Program

## RESEARCH EXPERIENCE

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### Research Assistant, The Ohio State University

Aug 2017 - Aug 2023

Advisor: Eric Fosler-Lussier

Worked on robust and generalizable natural language interfaces to structured data (tables, databases, maps).

### Applied Scientist Intern, Amazon AWS AI

May 2022 - Aug 2022

Mentor: Jun Wang, Patrick Ng, Zhiguo Wang

Designed and curated a diagnostic evaluation benchmark toward Text-to-SQL robustness.

### Applied Scientist Intern, Amazon Alexa AI

May 2021 - Aug 2021

Mentor: Vaibhav Kumar, Sunghyun Park, Sungjin Lee

Worked on heterogeneous feature representation pre-training in large-scale conversational AI system.

### Research and Development Intern, Pinterest

May 2020 - Aug 2020

Mentor: Supeng Ge, Mao Ye

Developed a unified ads retrieval model on different surfaces, outperformed the production model up to 15% on revenue and 10% on user engagement.

### Research Intern, JD.com AI research

May 2018 - Aug 2018

Mentor: Jing Huang, Xiaodong He

Worked on converting natural language question to structured query (SQL) for unseen Database tables.

## TEACHING EXPERIENCE

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**Instructor**, Introduction to Artificial Intelligence at The Ohio State University

2022

**Teaching Assistant**, Modeling and Problem Solving with Spreadsheets and Databases at The Ohio State University

2017-2022

## PUBLICATIONS

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**R-WoM: Retrieval-augmented World Model For Computer-use Agents** Preprint, 2025  
*Kai Mei, Jiang Guo, Shuaichen Chang, Mingwen Dong, Dongkyu Lee, Xing Niu, Jiarong Jiang*

**Towards Better Understanding Table Instruction Tuning: Decoupling the Effects from Data versus Models** Preprint, 2025  
*Naihao Deng, Sheng Zhang, Henghui Zhu, Shuaichen Chang, Jian Zhang, Alexander Hanbo Li, Chung-Wei Hang, Hideo Kobayashi, Yiqun Hu, Patrick Ng*

**Automated Composition of Agents: A Knapsack Approach for Agentic Component Selection** NeurIPS, 2025  
*Michelle Yuan, Khushbu Pahwa, Shuaichen Chang, Mustafa Kaba, Monica Sunkara, Jiarong Jiang, Xiaofei Ma, Yi Zhang*

**PRACTIQ: A Practical Conversational text-to-SQL dataset with Ambiguous and Unanswerable Queries** NAACL, 2025  
*Mingwen Dong, Nischal Ashok Kumar, Yiqun Hu, Anuj Chauhan, Chung-Wei Hang, Shuaichen Chang, Lin Pan, Wuwei Lan, Henghui Zhu, Jiarong Jiang, Patrick Ng, Zhiguo Wang*

**You Only Read Once (YORO): Learning to Internalize Database Knowledge for Text-to-SQL** NAACL, 2025  
*Hideo Kobayashi, Wuwei Lan, Peng Shi, Shuaichen Chang, Jiang Guo, Henghui Zhu, Zhiguo Wang, Patrick Ng*

**RAGChecker: A Fine-grained Framework for Diagnosing Retrieval-Augmented Generation** NeurIPS, 2024  
*Dongyu Ru\*, Lin Qiu\*, Xiangkun Hu\*, Tianhang Zhang\*, Peng Shi\*, Shuaichen Chang\*, Cheng Jiayang, Cunxiang Wang, Shichao Sun, Huanyu Li, Zizhao Zhang, Binjie Wang, Jiarong Jiang, Tong He, Zhiguo Wang, Pengfei Liu, Yue Zhang, Zheng Zhang (\*shared first author)*

**Selective Demonstrations for Cross-domain Text-to-SQL** EMNLP Findings, 2023  
*Shuaichen Chang, Eric Fosler-Lussier*

**How to Prompt LLMs for Text-to-SQL: A Study in Zero-shot, Single-domain, and Cross-domain Settings** NeurIPS TRL workshop, 2023  
*Shuaichen Chang, Eric Fosler-Lussier*

**Dr.Spider: A Diagnostic Evaluation Benchmark towards Text-to-SQL Robustness** ICLR 2023  
*Shuaichen Chang, Jun Wang, Mingwen Dong, Lin Pan, Henghui Zhu, Alexander Hanbo Li, Wuwei Lan, Sheng Zhang, Jiarong Jiang, Joseph Lilien, Steve Ash, William Yang Wang, Zhiguo Wang, Vittorio Castelli, Patrick Ng, Bing Xiang* **Notable Top 5%**

**MapQA: A Dataset for Question Answering on Choropleth Maps** NeurIPS TRL workshop, 2022  
*Shuaichen Chang\*, David Palzer\*, Jialin Li, Eric Fosler-Lussier, Ningchuan Xiao (\*shared first author)*

**ExplainaBoard: An Explainable Leaderboard for NLP** ACL , 2021  
*Pengfei Liu, Jinlan Fu, Yang Xiao, Weizhe Yuan, Shuaichen Chang, Junqi Dai, Yixin Liu, Zihuiwen Ye, Graham Neubig* **Best Demo Paper**

**Prefix-to-SQL: Text-to-SQL Generation from Incomplete User Questions** ACL NLP4Prog workshop, 2021  
*Naihao Deng, Shuaichen Chang, Peng Shi, Tao Yu, Rui Zhang*

**Did You Ask a Good Question? A Cross-Domain Question Intention Classification Benchmark for Text-to-SQL** EMNLP IntEx-SemPar workshop, 2020  
*Yusen Zhang, Xiangyu Dong, Shuaichen Chang, Tao Yu, Peng Shi, Rui Zhang*

**Zero-shot Text-to-SQL Learning with Auxiliary Task** AAAI, 2020  
*Shuaichen Chang, Pengfei Liu, Yun Tang, Jing Huang, Xiaodong He, Bowen Zhou*

**Contextualized Non-local Neural Networks for Sequence Learning** AAAI, 2019  
*Pengfei Liu, Shuaichen Chang, Xuanjing Huang, Jian Tang, Jackie Chi Kit Cheung*

## SELECTED AWARDS

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Post-internship Fellowship, Amazon	2022
Best Demo Paper, ACL	2021
Honors Student in Top Talent Undergraduate Training Program, Fudan University	2017
National Scholarship, Ministry of Education of P.R.China	2016
National Scholarship, Ministry of Education of P.R.China	2015
Silver Medal in the ACM-ICPC Asia Regional, ACM-ICPC	2013

## PROFESSIONAL SERVICE

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Conference Reviewer: AAAI 2023-, ACL 2023-, EMNLP 2021-, ICLM 2024-, ICLR 2024-, LREC-COLING 2024-, NeurIPS 2023-

## PROFESSIONAL SKILLS

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<b>Programming Languages</b>	Python, C/C++, Java, SQL
<b>Libraries</b>	Pytorch, TensorFlow, Theano, OpenCV