

# Jieyu (Jerry) Li

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🏠 Personal Website

🎓 Google Scholar

## EDUCATION

2020 – 2023     **M.E. of Computer Science**  
Shanghai Jiao Tong University  
Directed by Kai Yu, PhD

2016 – 2020     **B.E. of Computer Science**  
Shanghai Jiao Tong University  
Directed by Kai Yu, PhD

## RESEARCH EXPERIENCES

2024 – present     **Volunteer Researcher in Wei Ji Ma's Lab**  
New York University  
Research Focus: Planning

2023 – present     **Research Assistant in Xing Tian's Lab**  
NYU-ECNU Institute of Brain and Cognitive Science  
Research Focus: Attention, Speech Perception/Production

2018 – 2023     **Undergraduate Researcher & Postgraduate Researcher in X-LANCE Lab**  
Center for Brain-like Computing and Machine Intelligence (BCMI), Shanghai Jiao Tong University  
Research Focus: Semantic Parsing, Natural Language Processing

## PUBLICATIONS

### Under Review

- 1 Ruisheng Cao, Hanchong Zhang, **Jieyu Li**, et al., "Astormer: An ast structure-aware transformer decoder for text-to-sql", 2023. arXiv: 2310.18662 [cs.CL]. 🔗 URL: <https://arxiv.org/abs/2310.18662>.

### Journal Articles

- 1 **Jieyu Li**, Zhi Chen, Lu Chen, et al., "Dir: A large-scale dialogue rewrite dataset for cross-domain conversational text-to-sql," *Applied Sciences*, vol. 13, no. 4, 2023, ISSN: 2076-3417. 🔗 DOI: 10.3390/app13042262.
- 2 Ruisheng Cao, Lu Chen, **Jieyu Li**, et al., "A heterogeneous graph to abstract syntax tree framework for text-to-sql," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 45, no. 11, pp. 13 796–13 813, 2023. 🔗 DOI: 10.1109/TPAMI.2023.3298895.

### Conference Proceedings

- 1 Hanchong Zhang \*, **Jieyu Li** \*, Lu Chen, et al., "CSS: A large-scale cross-schema Chinese text-to-SQL medical dataset," in *Findings of the Association for Computational Linguistics: ACL 2023*, Toronto, Canada: Association for Computational Linguistics, Jul. 2023, pp. 6970–6983. 🔗 DOI: 10.18653/v1/2023.findings-acl.435.
- 2 **Jieyu Li**, Lu Chen, Ruisheng Cao, et al., "Exploring schema generalizability of text-to-SQL," in *Findings of the Association for Computational Linguistics: ACL 2023*, Toronto, Canada: Association for Computational Linguistics, Jul. 2023, pp. 1344–1360. 🔗 DOI: 10.18653/v1/2023.findings-acl.87.
- 3 **Jieyu Li**, Su Zhu, and Kai Yu, "A hierarchical tracker for multi-domain dialogue state tracking," in *ICASSP 2020 - 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2020, pp. 8014–8018. 🔗 DOI: 10.1109/ICASSP40776.2020.9053248.
- 4 Su Zhu, **Jieyu Li**, Lu Chen, and Kai Yu, "Efficient context and schema fusion networks for multi-domain dialogue state tracking," in *Findings of the Association for Computational Linguistics: EMNLP 2020*, Online: Association for Computational Linguistics, Nov. 2020, pp. 766–781. 🔗 DOI: 10.18653/v1/2020.findings-emnlp.68.
- 5 Ruisheng Cao, Su Zhu, Chen Liu, **Jieyu Li**, and Kai Yu, "Semantic parsing with dual learning," in *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics*, Florence, Italy: Association for Computational Linguistics, Jul. 2019, pp. 51–64. 🔗 DOI: 10.18653/v1/P19-1007.

## PROJECTS

### Attention

Sep. 2023 – present

#### What Is the Representation of Visual Attention?

We designed a novel visual search paradigm to investigate the representation of visual attention. We are conducting eye-tracking experiments to evaluate our theory.  
Responsibility: Conduct Eye-tracking experiment; Data Analysis  
Supervisor: Xing Tian, PhD

### Planning

Mar. 2024 – present

#### Explore Human Planning via a Two-Player Board Game

We study human planning in complex situations using the board game Four-in-a-Row. We're developing a toolkit to control experimental conditions and refining computational models to describe the planning process.  
Responsibility: Develop the toolkit; Model improvement  
Supervisor: Wei Ji Ma, PhD

### Neural Decoding

May. 2024 – present

#### Explore Neural Activity within the Brain While Sleeping

We developed deep learning models to detect sleep stages using large-scale neural data from Stereo-EEG. Currently, we're analyzing neural activity within these stages to test theories about sleep.  
Responsibility: Build Models; Data management  
Supervisor: Xing Tian, PhD

### Speech-Motor Control

Mar. 2023 – present

#### What Is the Reference of Error Estimation in Speech Vocalization?

We challenge existing error estimation theories in speech-motor control. By analyzing Stereo-EEG signals, we aim to provide evidence supporting either the motor-command hypothesis or the sensory-goal hypothesis.  
Responsibility: Conduct EEG and StereoEEG Experiments; Data Analysis  
Supervisor: Xing Tian, PhD

## PROFESSIONAL EXPERIENCES

### Conference Reviewer

International Conference on Learning Representations (ICLR)  
Annual Meeting of the Association for Computational Linguistics (ACL)  
Conference on Empirical Methods in Natural Language Processing (EMNLP)  
AAAI Conference on Artificial Intelligence (AAAI)  
Conference of the European Chapter of the Association for Computational Linguistics (EACL)

### Teaching Assistant

Fall 2021, Fall 2022

CS3602-1/2 -Natural Language Processing  
Shanghai Jiao Tong University  
Supervisor: Kai Yu, PhD; Lu Chen, PhD; Zhouhan Lin, PhD

## AWARDS

- 2015      **Silver Prize** in 31st Chinese Mathematical Olympiad (CMO, final of the highest level mathematical Olympiad competition in China. Only 400 students are eligible to participate every year)
- 2020      **2nd Place** in The Evaluation of Chinese Human-Computer Dialogue Technology Competition Task 1, 9th National Conference on Social Media Processing (SMP2020-ECDT)

## SKILLS

Programming	Python, C++, SQL, JavaScript, HTML, Matlab
Software & Tool	PyTorch, Transformers, Psychtoolbox, PsychoPy, Latex
Method	Computational Modelling (Bayesian Models, Deep-Learning Models), Behavior Experiments, Neuroimage (EEG, StereoEEG)

## REFERENCES

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**Wei Ji Ma**, PhD

Professor of Neural Science and Psychology  
New York University  
weijima@nyu.edu

**Xing Tian**, PhD

Associate Professor of Neural and Cognitive Sciences  
New York University Shanghai  
xing.tian@nyu.edu

**Kai Yu**, PhD

Distinguished Professor of Computer Science and Engineering  
Shanghai Jiao Tong University (SJTU)  
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