

# Ziqiao Ma (Martin Z. Ma)

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Last updated: January 23, 2025

## Research Interest

The three constant themes of my research are **Language**, **Interaction**, and **Embodiment**, with a focus on (1) enabling language grounding to non-linguistic contexts, e.g., 2D vision, spatial/3D perception, and shared beliefs in interactions; and (2) discovering mechanistic (mis)alignment between humans and AI. My ultimate goal is to facilitate seamless human-AI collaboration and provide insights into cognitive development from a computational perspective. Find a more interactive research statement [here](#).

## Education

<b>University of Michigan</b> <b>Ph.D.</b> , Computer Science and Engineering <i>Certificate</i> , Cognitive Science Advisor: Joyce Chai	2026 (exp.)
<b>University of Michigan</b> <b>B.S.</b> , Computer Science <i>Minor</i> , Mathematics	2021

## Selected Awards & Honors

### Paper Awards and Challenge Prizes

Outstanding Paper Award, ACL 2023	2023
First Prize, Amazon Alexa Simbot Challenge	2023

### Fellowships and Scholarships

Weinberg Cognitive Science Fellowship (9,000 USD)	2024
Rackham Conference Travel Grant: NeurIPS 2024 (1,150 USD)	2024
Rackham Doctoral Intern Fellowship (9,000 USD)	2024
Rackham Conference Travel Grant: IJCAI 2023 (1,600 USD)	2023
Rackham Conference Travel Grant: EMNLP 2022 (1,600 USD)	2022
John Wu & Jane Sun Excellence Scholarship (200,000 RMB)	2017

### Honors and Recognition

Outstanding Graduate Student Instructor Award	2022
James B. Angell Scholar	2021

## Industry Experience

<b>Adobe Research</b> Research Scientist Intern, <i>Host: Hao Tan, Kalyan Sunkavalli</i>	2024
<b>Amazon AGI (Alexa AI)</b> Applied Scientist Intern, <i>Host: Xiaofeng Gao, Qiaozi Gao, Govind Thattai</i>	2023

## Publications [\[G\]](#)

\* → equal contribution

† → correspondence

## Editorship

- [E1] Parisa Kordjamshidi, Xin Eric Wang, Yue Zhang, **Ziqiao Ma**, and Mert Inan, eds. *Proceedings of the 4th Workshop on Spatial Language Understanding and Grounded Communication for Robotics (SpLU-RoboNLP 2024)*. Bangkok, Thailand: Association for Computational Linguistics, Aug. 2024.

## Tutorials

- [T1] Freda Shi, **Ziqiao Ma**, Jiayuan Mao, Parisa Kordjamshidi, and Joyce Chai. *Learning Language through Grounding*. The 2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL 2025). July 2025.

## Conference Papers

- [C1] **Ziqiao Ma**<sup>\*</sup>, Zekun Wang<sup>\*</sup>, and Joyce Chai. “Babysit A Language Model From Scratch: Interactive Language Learning by Trials and Demonstrations”. In: *Proceedings of the 2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL)*. Vol. 37. 2025.
- [C2] Zheyuan Zhang<sup>\*</sup>, Fengyuan Hu<sup>\*</sup>, Jayjun Lee<sup>\*</sup>, Freda Shi, Parisa Kordjamshidi, Joyce Chai, and **Ziqiao Ma**<sup>†</sup>. “Do Vision-Language Models Represent Space and How? Evaluating Spatial Frame of Reference under Ambiguities”. In: *Proceedings of the Thirteenth International Conference on Learning Representations (ICLR)*. 2025.
- [C3] Xuweiyi Chen<sup>\*</sup>, **Ziqiao Ma**<sup>\*</sup>, Xuejun Zhang<sup>\*</sup>, Sihan Xu, Shengyi Qian, Jianing Yang, David F Fouhey, and Joyce Chai. “Multi-Object Hallucination in Vision-Language Models”. In: *Proceedings of the Conference on Neural Information Processing Systems (NeurIPS)*. Vol. 37. 2024.
- [C4] Yidong Huang, Jacob Sansom, **Ziqiao Ma**<sup>†</sup>, Felix Gervits, and Joyce Chai. “DriVLMe: Enhancing LLM-based Autonomous Driving Agents with Embodied and Social Experiences”. In: *Proceedings of the 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2024.
- [C5] Sihan Xu, Yidong Huang, Jiayi Pan, **Ziqiao Ma**<sup>†</sup>, and Joyce Chai. “Inversion-Free Image Editing with Language-Guided Diffusion Models”. In: *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*. 2024, pp. 9452–9461.
- [C6] Yichi Zhang, **Ziqiao Ma**, Xiaofeng Gao, Suhaila Shakiah, Qiaozi Gao, and Joyce Chai. “Groundhog: Grounding large language models to holistic segmentation”. In: *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*. 2024, pp. 14227–14238.

- [C7] Sihan Xu\*, **Ziqiao Ma\***, Yidong Huang, Honglak Lee, and Joyce Chai. “Cyclenet: Rethinking cycle consistency in text-guided diffusion for image manipulation”. In: *Proceedings of the Conference on Neural Information Processing Systems (NeurIPS)*. Vol. 36. 2023, pp. 10359–10384.
- [C8] **Ziqiao Ma**, Jacob Sansom, Run Peng, and Joyce Chai. “Towards A Holistic Landscape of Situated Theory of Mind in Large Language Models”. In: *Findings of the Association for Computational Linguistics: EMNLP 2023 (Findings of EMNLP)*. 2023, pp. 1011–1031.
- [C9] Cristian-Paul Bara, **Ziqiao Ma**, Yingzhuo Yu, Julie Shah, and Joyce Chai. “Towards collaborative plan acquisition through theory of mind modeling in situated dialogue”. In: *Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence (IJCAI)*. 2023, pp. 2958–2966.
- [C10] **Ziqiao Ma\***, Jiayi Pan\*, and Joyce Chai. “World-to-Words: Grounded Open Vocabulary Acquisition through Fast Mapping in Vision-Language Models”. In: *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL), Volume 1: Long Papers*. **Outstanding Paper Award**. 2023, pp. 524–544.
- [C11] Shane Storks, Keunwoo Yu, **Ziqiao Ma**, and Joyce Chai. “NLP Reproducibility For All: Understanding Experiences of Beginners”. In: *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL), Volume 1: Long Papers*. Theme Track. 2023, pp. 10199–10219.
- [C12] **Ziqiao Ma**, Benjamin VanDerPloeg, Cristian-Paul Bara, Yidong Huang, Eui-In Kim, Felix Gervits, Matthew Marge, and Joyce Chai. “DOROTHIE: Spoken Dialogue for Handling Unexpected Situations in Interactive Autonomous Driving Agents”. In: *Findings of the Association for Computational Linguistics: EMNLP 2022 (Findings of EMNLP)*. 2022, pp. 4800–4822.
- [C13] Yichi Zhang, Jianing Yang, Jiayi Pan, Shane Storks, Nikhil Devraj, **Ziqiao Ma**, Keunwoo Yu, Yuwei Bao, and Joyce Chai. “DANLI: Deliberative Agent for Following Natural Language Instructions”. In: *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP)*. 2022, pp. 1280–1298.

## Journal Articles

- [J1] Yue Zhang\*, **Ziqiao Ma\***, Jialu Li\*, Yanyuan Qiao\*, Zun Wang\*, Joyce Chai, Qi Wu, Mohit Bansal, and Parisa Kordjamshidi. “Vision-and-Language Navigation Today and Tomorrow: A Survey in the Era of Foundation Models”. In: *Transactions on Machine Learning Research (TMLR)* (2024).
- [J2] Jiaqi Ma\*, **Ziqiao Ma\***, Joyce Chai, and Qiaozhu Mei. “Partition-Based Active Learning for Graph Neural Networks”. In: *Transactions on Machine Learning Research (TMLR)* (2023). ISSN: 2835-8856.

## Workshop, Challenges and Shared Tasks Papers

- [W1] Yichi Zhang, Jianing Yang, Keunwoo Peter Yu, Yinpei Dai, Shane Storks, Yuwei Bao, Jiayi Pan, Nikhil Devraj, **Ziqiao Ma**, and Joyce Chai. “SEAGULL: An Embodied Agent for Instruction Following through Situated Dialog”. In: *Alexa Prize SimBot Challenge Proceedings*. **First Place**. 2023.

## Preprints

- [PP1] Hua Shen, Tiffany Knearem, Reshmi Ghosh, Kenan Alkiek\*, Kundan Krishna\*, Yachuan Liu\*, **Ziqiao Ma\***, Savvas Petridis\*, Yi-Hao Peng\*, Qiwei Li\*, Sushrita Rakshit\*, Chenglei Si\*, Yutong Xie\*, Jeffrey P. Bigham, Frank Bentley, Joyce Chai, Zachary Lipton, Qiaozhu Mei, Rada Mihalcea, Michael Terry, Diyi Yang, Meredith Ringel Morris, Paul Resnick, and David Jurgens. “Towards Bidirectional Human-AI Alignment: A Systematic Review for Clarifications, Framework, and Future Directions”. In: *arXiv preprint* (2024).

## Recent Invited Talks

- [P1] **Ziqiao Ma**. *Language Grounding to the Visual World and Human Interactions: How Far Are We from Embodied Dialogue Agents?* University of Washington. On Site, Host: Jiafei Duan. Dec. 2024.
- [P2] **Ziqiao Ma**. *Seeing What You See: Perceptual Perspective-Taking Towards a Situated Machine Theory of Mind*. Cognitive Science Seminar Series @ University of Michigan. Remote, Host: Andrew McInnerney. Dec. 2024.
- [P3] **Ziqiao Ma**. *Babysit A Language Model From Scratch: Interactive Language Learning by Trials and Demonstrations*. Deep Learning: Classics and Trends (DLCT). Remote, Host: Rosanne Liu. July 2024.
- [P4] **Ziqiao Ma**. *Language Grounding to the Visual World and Human Interactions: How Far Are We from Embodied Dialogue Agents?* Korea Advanced Institute of Science and Technology (KAIST). Remote. June 2024.
- [P5] **Ziqiao Ma**. *Babysit A Language Model From Scratch: Interactive Language Learning by Trials and Demonstrations*. Computational Communicative Development Seminar (CoCoDev). Remote, Host: Abdellah Fourtassi. June 2024.
- [P6] **Ziqiao Ma**. *Language Grounding to the Visual World and Human Interactions: How Far Are We from Embodied Dialogue Agents?* University of Maryland. Remote, Host: Furong Huang. May 2024.

## Recent Teaching [NLP]

### University of Michigan

FA 2024	Graduate Student Instructor, Natural Language Processing (CSE 595)
FA 2022	Graduate Student Instructor, Natural Language Processing (EECS 595)
	<b>Outstanding GSI Award</b>
WN 2021	Instructional Aide, Intro to Artificial Intelligence (EECS 492)

### Guest Lectures

May 2024	Machine Learning with Few Labels (DSC 291) University of California San Diego, Host: Zhiting Hu
Nov. 2023	Psychology of Language (PSYCH 745) University of Michigan, Host: Julie Boland

## Academic Service

### Venue Coordination

- **Co-Instructor**, Tutorial on Learning Language through Grounding at NAACL 2025.
- **Co-Organizer**, The 1st Workshop on Bidirectional Human-AI Alignment (Bi-Align @ ICLR 2025).
- **Co-Organizer**, The 4th International Combined Workshop on Spatial Language Understanding and Grounded Communication for Robotics (SpLU-RobonLP @ ACL 2024).
- **Poster/Demo Chair**, The 5th Michigan AI Symposium: AI and Accessibility, 2022.
- **Seminar Tsar**, Michigan AI Seminar Series, 2023-2025.

### Conference Reviewing and Program Committee

- Conferences: Natural Language Processing (ARR, ACL, EMNLP, NAACL, COLING, COLM), Machine Learning (ICLR, ICML, NeurIPS, AISTATS, ECML), Computer Vision (CVPR, ECCV), Cognitive Science (COGSCI), Robotics (IROS, HRI), Computational Social Science (ICWSM).
- Workshop Committee: Workshop on Representational Alignment (Re-Align @ ICLR 2025); Workshop on Foundation Models in the Wild (FM-Wild @ ICML 2024; ICLR 2025); Pluralistic-Alignment Workshop (NeurIPS 2024); Workshop on Behavioral Machine Learning (Behavioral ML @ NeurIPS 2024); Workshop on AI Behavioral Science (AIBS @ KDD 2024); Widening NLP Workshop (WiNLP @ EMNLP 2024); Large Language Models and Cognition (LLMCog @ ICML 2024).

### Journal Reviewer

- Machine Learning (TMLR, TNNLS, DMLR), Robotics (RA-L).

## Selected Community Service

### Diversity, Equity, and Inclusion Promotion

- 2018 Voluntary Math Teacher, Yunnan San He Junior High School
- 2018 Member, Bangladesh Poverty Reduction Challenge

### University of Michigan

- 2023-2024 Secretary, CSE Graduate Student Organization (CSEG)
- 2022-2023 Vice President and Treasurer, CSE Graduate Student Organization (CSEG)
- 2021-2023 Mentor, Michigan Student Artificial Intelligence Lab (MSAIL)

## Academic Advising

- 2022-2024 Run Peng, M.S., University of Michigan → Ph.D., University of Michigan
- 2022-2024 Jacob Sansom, M.S., University of Michigan → Ph.D., University of Michigan
- 2022-2024 Zekun Wang, M.S., University of Michigan → Ph.D., Georgia Institute of Technology
- 2022-2024 Xijia Zhang, M.S., University of Michigan → Ph.D., Georgia Institute of Technology
- 2021-2023 Jiayi Pan, B.S., University of Michigan → Ph.D., University of California, Berkeley