Jiageng Liu

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SUMMARY

I am a Ph.D. student in the Mobility Lab at UCLA, advised by Prof. Jiaqi Ma. My research focuses on spatial intelligence, embodied AI, and autonomous systems, with an emphasis on multimodal world modeling and closed-loop perception-action reasoning. My work develops vision-language agents for 3D spatial reasoning, generative simulation environments for embodied agents, and agentic reasoning frameworks for autonomous driving.

EDUCATION

University of California, Los Angeles — Los Angeles, California, United States
Ph.D. in Civil and Environmental Engineering — 09/2026-Present

University of Massachusetts Amherst — Amherst, Massachusetts, United States
M.S. in Computer Science ***GPA****:* 4.00/4.00 — 09/2024-12/2025

Zhejiang University — Hangzhou, Zhejiang, China
B.E. in Artificial Intelligence ***GPA****:* 3.75/4.00 ***Third-Year GPA:*** 3.96/4.00 — 09/2020-07/2024

PUBLICATIONS

- **Jiageng Liu*,** Weijie Lyu*, Xueting Li, Yejie Guo, Ming-Hsuan Yang. Edit3r: Instant 3D Scene Editing from Sparse Unposed Images. *In Proceedings of the European Conference on Computer Vision (ECCV 2026).* **(Oral)** Project Page
- Yuncong Yang*, **Jiageng Liu*,** Zheyuan Zhang et al. Test-Time Scaling with World Models for Spatial Reasoning. *Advances in Neural Information Processing Systems (NeurIPS 2025).* Project Page
- Yian Wang*, Xiaowen Qiu*, **Jiageng Liu*** et al. Architect: Generating Vivid and Interactive 3D Scenes with Hierarchical 2D Inpainting. *Advances in Neural Information Processing Systems (NeurIPS 2024).* Project Page
- Zeyuan Yang*, **Jiageng Liu***, Peihao Chen, Anoop Cherian, Tim K. Marks, Jonathan Le Roux, Chuang Gan. RILA: Reflective and Imaginative Language Agent for Zero-Shot Semantic Audio-Visual Navigation. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2024).* Project Page
- Zijun Cui*, Xiulong Liu*, Hao Fang*, Mingwei Xu, **Jiageng Liu**, et al. Do Joint Audio-Video Generation Models Understand Physics? *Advances in Neural Information Processing Systems (NeurIPS 2026).* Project Page
- Qinhong Zhou **et al.** Virtual Community: An Open World for Humans, Robots, and Society. *In Proceedings of the International Conference on Learning Representations (ICLR 2026).* Project Page
- Zehan Wang, Yang Zhao, Xize Cheng, Haifeng Huang, **Jiageng Liu** et al. Connecting multi-modal contrastive representations. *Advances in Neural Information Processing Systems (NeurIPS 2023).* Project Page
- Yuhang Xu, Wanxu Xia, Yipeng Chen, **Jiageng Liu** et al. WordDiffuser: Helping beginners cognize and memorize glyph-semantic pairs using diffusion. *In Proceedings of the* IEEE *International Symposium on Computational Intelligence and Design (ISCID 2023).* Project Page

PREPRINT

- **Jiageng Liu**, Seth Z. Zhao, Zewei Zhou, Alejandro Huerta, Aidan Bayer-Calvert, Yuxin Bao, Haotian Lin, Robert Spataru, Zijun Cui, Yining Hong, Bolei Zhou, Jiaqi Ma. AutoAgent0: An Agentic Runtime for Safe Closed-loop Driving. (Under review) Project Page
- Yining Hong*, **Jiageng Liu***, Han Yin, Manling Li, Leonidas Guibas, Fei-Fei Li, Jiajun Wu, Yejin Choi. ESI-Bench: Towards Embodied Spatial Intelligence that Closes the Perception–Action Loop. (Under review) Project Page
- **Jiageng Liu**, Nirav Savaliya, Faizan Siddiqui, Sahith Reddy Chada, Enna Sachdeva. LSM-VLM: Long-Short Memory VLM with World-Model for 3D Spatial Reasoning. (Under review)

EXPERIENCES

UCLA Mobility Lab, University of California, Los Angeles Los Angeles, California, United States
Ph.D. Student & Research Assistant, Advisor: Jiaqi Ma 07/2026-Present
- Develop mobility-oriented spatial intelligence methods for complex scene understanding, multimodal reasoning, and action planning in autonomous systems.

Honda Research Institute USA San Jose, California, United States
Research Intern, Advisor: Nirav Savaliya 01/2026-05/2026
- First-authored LSM-VLM, a closed-loop VLM framework for 3D spatial reasoning that combines long-term and short-term memory, world-model imagination, and confidence-aware memory updates.

Vision and Learning Lab, University of California, Merced Merced, California, United States
Research Intern, Advisor: Ming-Hsuan Yang 06/2025-11/2025
- First-authored Edit3r, an instant 3D scene editing framework that reconstructs and edits 3D scenes from sparse unposed images in a single feed-forward pass; accepted at ECCV 2026 (Oral).

UMass Embodied AGI Lab, University of Massachusetts Amherst Amherst, Massachusetts, United States
Research Participant, Advisor: Chuang Gan & Jianwei Yang 07/2024-05/2025
- Co-first-authored MindJourney, test-time scaling for 3D spatial reasoning by pairing VLMs with controllable video world models and spatial beam search; accepted at NeurIPS 2025.
- Co-authored Virtual Community, a large-scale social world simulation platform with real-world-derived scenes, socially grounded embodied agents, and automatic multi-scene indoor generation, accepted at ICLR 2026.

MIT-IBM Watson AI Lab Boston, Massachusetts, United States
Research Intern, Advisor: Chuang Gan 11/2023-06/2024
- Co-first-authored RILA, a zero-shot Semantic Audio-Visual Navigation framework in Habitat that uses LLM commonsense to imagine room layouts and guide navigation; accepted at CVPR 2024.
- Co-first-authored Architect, lifting 2D inpainting and visual foundation model perception into iterative, hierarchical interactive 3D scene generation; accepted at NeurIPS 2024.

Yi Wise AI Lab, Zhejiang University Hangzhou, Zhejiang, China
Research Participant, Advisor: Zhou Zhao 02/2023-05/2023
- Worked on multi-modal contrastive representation learning, focusing on aligning vision, audio, and language modalities into a shared semantic space without paired data.
- Co-authored the Connecting Multi-modal Contrastive Representations paper, which was accepted at NeurIPS 2023.

HONORS & AWARDS

National Scholarship (Top 0.2%) Ministry of Education, China
Top Ten Rising Star Award (Top 10) College of Computer Science & Technology, Zhejiang University, China
First-Class Scholarship (Top 3%) Zhejiang University, China
Learning Innovation Scholarship (Top 1.5%) College of Computer Science & Technology, Zhejiang University, China

SKILLS & INTERESTS

Research Interests: Spatial Intelligence, Autonomous Driving, Embodied AI, Computer Vision.
Skills: Python(PyTorch, Numpy), C++, VLM Training, Diffusion Models, Embodied AI Simulators (Genesis, Blender, Habitat, OmniGibson)
Academic Service: Reviewer for NeurIPS 2025–2026, CVPR 2026, ICLR 2027, IEEE TPAMI, TASE, OJ-ITS.