

Yunfan Jiang

🌐 WEBSITE: yunfanj.com

✉ EMAIL: yunfanj@cs.stanford.edu

📍 ADDRESS: Gates 220, 353 Jane Stanford Way, Stanford, CA 94305

RESEARCH INTEREST I am interested in embodied and general-purpose intelligence with a focus on **robotics** and **embodied AI**.

EDUCATION **Stanford University**, Stanford, CA Sept. 2023 – Now
Ph.D. in Computer Science, advised by Prof. Fei-Fei Li

Stanford University, Stanford, CA June 2023
M.S. in Electrical Engineering

The University of Edinburgh, Edinburgh, UK July 2020
B.Eng. in Electronics & Electrical Engineering with First-Class Honours

HONORS & AWARDS

- NeurIPS 2023 Scholar Award 2023
- **Stanford Engineering Exceptional Master’s Student Award** 2023
- ICML Conference Travel Award 2023
- **NeurIPS 2022 Outstanding Paper Award** 2022
- Ewart Farvis Prize (Outstanding Bachelor Thesis) 2020
- The University of Edinburgh School of Engineering Scholarship 2018, 2019

EXPERIENCE **Stanford Vision and Learning Lab** Stanford, CA
Graduate Research Assistant Sept. 2023 – Now

- Advised by Prof. Fei-Fei Li.
- Developed a holistic human-in-the-loop approach to tackling sim-to-real transfer for contact-rich robotic arm manipulation tasks [7].

Boston Dynamics AI Institute Cambridge, MA
Research Intern June 2023 – Aug. 2023

- Hosted by Dr. David Watkins and Dr. Jennifer Barry.
- Developed *VIMA+*, an extension of VIMA [3] to a real UR5e robot.
- Investigated video prediction models for robotic manipulation at scale.

NVIDIA Research Santa Clara, CA
Research Intern ◊ AI Algorithm Team June 2022 – Jan. 2023

- Hosted by Dr. Jim Fan, Prof. Yuke Zhu, and Prof. Anima Anandkumar.
- Developed embodied agents empowered by foundation models in various domains such as those related to robot learning [3] and open-ended video games [4, 1].
- Created a novel algorithm to enhance Transformer agents’ learning efficiency and generalization [2].

ByteDance Beijing, China
Research Intern ◊ AI Lab Sept. 2020 – Aug. 2021

- Reproduced the *For The Win* (FTW) agent in the *Science* paper and deployed it in a 3D MOBA mobile game [demo].

The University of Edinburgh

Undergraduate Research Assistant

- Developed a dual-branch ConvNet model for high-fidelity and rapid imaging of reactive flows [6].

Edinburgh, UK

May 2019 – July 2020

REFEREED PUBLICATIONS

* Equal contribution. † Equal advising.

- [1] Guanzhi Wang, Yuqi Xie, **Yunfan Jiang***, Ajay Mandlekar*, Chaowei Xiao, Yuke Zhu, Linxi Fan[†], and Anima Anandkumar[†]. “Voyager: An Open-Ended Embodied Agent with Large Language Models”. In: *Transactions on Machine Learning Research* (2024). ISSN: 2835-8856. Also **Oral Presentation** at NeurIPS 2023 Agent Learning in Open-Endedness Workshop and Intrinsically Motivated Open-Ended Learning Workshop.
- [2] Lucy Xiaoyang Shi*, **Yunfan Jiang***, Jake Grigsby, Linxi Fan[†], and Yuke Zhu[†]. “Cross-Episodic Curriculum for Transformer Agents”. In: *Conference on Neural Information Processing Systems (NeurIPS)*. 2023.
- [3] **Yunfan Jiang**, Agrim Gupta*, Zichen Zhang*, Guanzhi Wang*, Yongqiang Dou, Yanjun Chen, Li Fei-Fei, Anima Anandkumar, Yuke Zhu[†], and Linxi Fan[†]. “VIMA: General Robot Manipulation with Multimodal Prompts”. In: *International Conference on Machine Learning (ICML)*. 2023. Also **Oral Presentation** at NeurIPS 2022 Foundation Models for Decision Making Workshop.
- [4] Linxi Fan, Guanzhi Wang*, **Yunfan Jiang***, Ajay Mandlekar, Yuncong Yang, Haoyi Zhu, Andrew Tang, De-An Huang, Yuke Zhu[†], and Anima Anandkumar[†]. “MineDojo: Building Open-Ended Embodied Agents with Internet-Scale Knowledge”. In: *Conference on Neural Information Processing Systems (NeurIPS), Datasets and Benchmarks Track*. 2022. **Outstanding Paper Award, Featured Paper Presentation**.
- [5] Yueyi Jiang, **Yunfan Jiang**, Liu Leqi, and Piotr Winkielman. “Many Ways to Be Lonely: Fine-Grained Characterization of Loneliness and Its Potential Changes in COVID-19”. In: *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM)* 16.1 (May 2022), pp. 405–416.
- [6] **Yunfan Jiang**, Jingjing Si, Rui Zhang, Godwin Enemali, Bin Zhou, Hugh McCann, and Chang Liu. “CSTNet: A Dual-Branch Convolutional Neural Network for Imaging of Reactive Flows Using Chemical Species Tomography”. In: *IEEE Transactions on Neural Networks and Learning Systems* 34.11 (2023), pp. 9248–9258. DOI: 10.1109/TNNLS.2022.3157689. Submitted in 2020.

TECHNICAL REPORTS

- [7] **Yunfan Jiang**, Chen Wang, Ruohan Zhang, Jiajun Wu, and Li Fei-Fei. “TRANSIC: Sim-to-Real Policy Transfer by Learning from Online Correction”. In: *arXiv preprint arXiv: Arxiv-2405.10315* (2024).

SOFTWARE

- [S1] *TRANSIC-Envs*. URL: <https://github.com/transic-robot/transic-envs>.
- [S2] *VIMA-Bench*. URL: <https://github.com/vimalabs/VIMABench>. **200+ GitHub Stars**.
- [S3] *MineDojo*. URL: <https://github.com/MineDojo/MineDojo>. **1.7K+ GitHub Stars**.

SPEECHES

“VIMA: General Robot Manipulation with Multimodal Prompts” [pdf]

- Invited Talk at Boston Dynamics AI Institute

Feb. 2023

- Oral Presentation at NeurIPS 2022 Foundation Models for Decision Making Workshop, New Orleans, LA Dec. 2022
- Invited Talk at Prof. Anima Anandkumar's Caltech Group Nov. 2022
- Invited Talk at Inspir.ai Oct. 2022

“*MineDojo: Building Open-Ended Embodied Agents with Internet-Scale Knowledge*”
[pdf]

- Lecture Talk at Stanford CS 422 Interactive and Embodied Learning Feb. 2023
- Invited Talk at Inspir.ai Oct. 2022
- Co-presentation at Prof. Anima Anandkumar's Caltech Group Aug. 2022

PROFESSIONAL SERVICES

Conference Reviewer

- Conference on Robot Learning (CoRL)
- International Conference on Machine Learning (ICML)
- International Conference on Learning Representations (ICLR)
- Conference on Neural Information Processing Systems (NeurIPS)

Workshop Organizer

- *Reviewer*, Workshop on LLM Agents, International Conference on Learning Representations (ICLR), 2024
- *Program Committee*, 2nd Workshop on Foundation Models for Decision Making, Conference on Neural Information Processing Systems (NeurIPS), 2023

Volunteer

- International Conference on Machine Learning (ICML) 2023

TEACHING

Course Grader, Stanford University

- ENGR 76 Information Science and Engineering, Spring 2023, Instructor: Prof. Ayfer Özgür
- EE 364A Convex Optimization I, Winter 2023, Instructor: Prof. Stephen Boyd
- EE 277 Reinforcement Learning: Behaviors and Applications, Fall 2021, Instructor: Prof. Benjamin Van Roy
- EE 236A Modern Optics, Fall 2021, Instructor: Dr. Mohammad Zaman

SELECTED MEDIA COVERAGE

- [M1] Stanford Electrical Engineering 2023 Commencement Ceremony and Awards, June 20, 2023. URL: <https://ee.stanford.edu/2023-commencement-ceremony-and-awards>.
- [M2] NVIDIA GTC Jensen Huang Keynote, Mar. 21, 2023. URL: <https://www.nvidia.com/en-us/on-demand/session/gtcspring23-s52226/>.
- [M3] “Building Generally Capable AI Agents with MineDojo,” by Nathan Horrocks, *NVIDIA Blog*. July 1, 2022. URL: <https://developer.nvidia.com/blog/building-generally-capable-ai-agents-with-minedojo/>.