

Yogesh KULKARNI

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RESEARCH INTERESTS

My research centers on building multimodal foundation models with reasoning capabilities that integrate vision (image/video), language, and audio through cross-modal alignment and grounding via Reinforcement Learning (for eg., DPO and GRPO).

Key Interests: Multimodal Large Language Models (Alignment, Reasoning), Reinforcement Learning based Post-Training, Audio - Video Understanding, Egocentric Video Understanding

EDUCATION

May 2028 Aug 2024	Arizona State University, TEMPE, AZ, USA Ph.D. in Computer Science Advisor : Dr. Pooyan Fazli GPA : 4.19/4.0
May 2024 Aug 2022	University of Southern California, LOS ANGELES, CA, USA Master of Science in Computer Science GPA : 3.67/4.0
May 2022 Aug 2018	Pune Institute of Computer Technology, PUNE, India Bachelor of Engineering in Computer Engineering CGPA : 9.8/10.0

EXPERIENCE

Present Aug 2024	People and Robots Laboratory (PeRL), ARIZONA STATE UNIVERSITY, Tempe, AZ Graduate Research Assistant Advisor : Dr. Pooyan Fazli <ul style="list-style-type: none">➤ Enhancing reasoning and alignment in video-language models through efficient, self-supervised preference optimization and reinforcement learning.
Aug 2023 Jun 2023	Nokia Bell Labs, NEW PROVIDENCE, NJ, USA Research Scientist Intern Advisor : Dr. Thomas Woo <ul style="list-style-type: none">➤ Accelerating distributed training of large language models by designing efficient model and pipeline parallelism strategies for heterogeneous clusters.
Mar 2024 Jan 2023	USC Institute for Creative Technologies, LOS ANGELES, CA, USA Graduate Research Assistant Advisor : Dr. Meida Chen <ul style="list-style-type: none">➤ Developed a 3D style transfer pipeline using CLIP-guided Gaussian splatting and diffusion models for large scale aerial point clouds.
Oct 2021 Jul 2021	RBCDSAI (IIT Madras), CHENNAI, India Research Intern Advisor : Dr. Nivethitha Somu <ul style="list-style-type: none">➤ Proposed an end-to-end framework for high-accuracy electricity theft detection in industrial smart grids using Enhanced Dynamic Time Warping.
Oct 2020 Jul 2020	DRDO HQ, NEW DELHI, India Research Intern <ul style="list-style-type: none">➤ Developed a novel, scalable framework for malware analysis by building a stacked ensemble classifier to detect malicious LSB steganography in images with high accuracy.

PUBLICATIONS

[CVPR 2026] Yogesh Kulkarni, Pooyan Fazli "AVATAR : Reinforcement Learning to See, Hear, and Reason Over Video" *In Proceedings of Conference on Computer Vision and Pattern Recognition*. [PDF]

[EMNLP 2025] Yogesh Kulkarni, Pooyan Fazli "VideoPASTA : 7K Preference Pairs That Matter for Video-LLM Alignment" *In Proceedings of 2025 Conference on Empirical Methods in Natural Language Processing* [PDF]

[COLM 2025] Yogesh Kulkarni, Pooyan Fazli "VideoSAVi : Self-Aligned Video Language Models without Human Supervision" *In Proceedings of 2nd Conference on Language Modeling* [PDF]

[arXiv' 25] Yogesh Kulkarni, Pooyan Fazli "EgoVITA : Learning to Plan and Verify for Egocentric Video Reasoning" *Arxiv Preprint 2025. Under Review*. [PDF]

[arXiv' 25] Chaoyu Li, Yogesh Kulkarni, Pooyan Fazli "ReGATE : Learning Faster and Better with Fewer Tokens in MLLMs" *Arxiv Preprint 2025. Under Review*. [PDF]

[ICDM' 21] Yogesh Kulkarni, S. Hussain, K. Ramamritham, N. Somu "EnsembleNTLDetect: An intelligent framework for electricity theft detection in smart grid" *In Proceedings of IEEE International Conference on Data Mining Workshops* [PDF]

[ACNS' 21] Yogesh Kulkarni, K. Bhambani "Kryptonite: An adversarial attack using regional focus" *In Proceedings of International Conference on Applied Cryptography and Network Security* [PDF]

[Big Data' 20] Yogesh Kulkarni, A. Gorkar "Intensive image malware analysis and least significant bit matching steganalysis" *In Proceedings of IEEE International Conference on Big Data* [PDF]

TEACHING EXPERIENCE

Graduate Teaching Associate, Arizona State University

- > CSE 485 : Computer Science Capstone I, Spring 2025
- > CSE 240 : Intro to Programming Languages, Fall 2024, Spring 2025
- > CSE 220 : Programming for Computer Engineering, Fall 2024

HONORS AND AWARDS

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| > Conference Travel Grant for ICDM conference in Auckland, NZ | Dec 2021 |
| > IIT Madras Summer Fellowship | Sep 2021 |
| > Conference Travel Grant for IEEE Big Data Conference in Atlanta, USA | Dec 2020 |

PROFESSIONAL SERVICE

Conference Reviewer

- > CVPR 2025, 2026
- > AAAI 2026
- > ICCV 2025
- > ACL Rolling Review (ARR)