


Yogesh KULKARNI

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RESEARCH INTERESTS

My research centers on building multimodal foundation models with reasoning capabilities that integrate vision, language, and audio through cross-modal alignment and grounding via Reinforcement Learning.

Major Interests: Multimodal Large Language Models (Alignment, Reasoning, Grounding), Data Efficient Reinforcement Learning, Audio - Video Understanding

EDUCATION

May 2028 Aug 2024	Arizona State University, TEMPE, AZ, USA Ph.D. in Computer Science Advisor : Dr. Pooyan Fazli GPA : 4.29/4.0
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">➤ Developed VideoPASTA, a framework enhancing video-language models by generating targeted adversarial examples and applying Direct Preference Optimization with only 7K pairs➤ Designed VideoSAVi, a self-training pipeline enabling video-language models to reason without external supervision, achieving state-of-the-art on MVBench (74.0%)
Aug 2023 Jun 2023	Nokia Bell Labs, NEW PROVIDENCE, NJ, USA Research Scientist Intern Advisor : Dr. Thomas Woo <ul style="list-style-type: none">➤ Implemented automatic model parallelism and partitioning for GPT-3 and LLaMA foundational models, increased training throughput by 15%➤ Designed communication and compute efficient inter-node pipeline parallelism for training LLMs on 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">➤ Built a 3D style transfer pipeline with Vision Transformer backbone using CLIP guided gaussian splatting➤ Utilized probabilistic diffusion models (DDPM) guided by semantic features and self-attention, leveraging pre-trained SparseUNet
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 detecting Electricity Theft in Industrial Smart Grids➤ Applied Enhanced Dynamic Time Warping for imputation, attaining 99% accuracy & Matthews Correlation Coefficient of 0.98
Oct 2020 Jul 2020	DRDO HQ, NEW DELHI, India Research Intern <ul style="list-style-type: none">➤ Developed a novel, robust and scalable framework for malware analysis of images➤ Constructed a Stacked Ensemble classifier for detecting LSB Matching Steganography with AUC of 0.98 & 0.87

PUBLICATIONS

2025 Yogesh Kulkarni, Pooyan Fazli "VideoPASTA : 7K Preference Pairs That Matter for Video-LLM Alignment" *Arxiv Preprint* 2025 [PDF]

2024 Yogesh Kulkarni, Pooyan Fazli "VideoSAVi : Self-Aligned Video Language Models without Human Supervision" *Arxiv Preprint* 2024 [PDF]

2021 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 (ICDM 2021)* [\[PDF\]](#)

2021 Yogesh Kulkarni, K. Bhambani “Kryptonite : An adversarial attack using regional focus” *In Proceedings of International Conference on Applied Cryptography and Network Security (ACNS 2021)* [\[PDF\]](#)

2020 Yogesh Kulkarni, A. Gorkar “Intensive image malware analysis and least significant bit matching steganalysis” *In Proceedings of IEEE International Conference on Big Data (Big Data 2020)* [\[PDF\]](#)

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

- ICCV 2025
- CVPR 2025
- ACL Rolling Review (ARR)