Aditya Taparia

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https://aditya-taparia.github.io

Education

Arizona State University — Tempe, AZ
Ph.D. in Computer Science — Jan. 2025 – Present
M.S. in Computer Science (Converted to Ph.D.) — Aug. 2023 – Dec. 2024

- Advisor: Ransalu Senanayake
- GPA: 3.9/4.0
- Relevant coursework: Fundamentals of Statistical Learning; Statistical Machine Learning; Planning & Learning Methods in AI; Data Visualization; Operational Deep Learning; Natural Language Processing.

Indian Institute of Information Technology Kottayam — Kerala, India
B.Tech (Honors) in Computer Science — Aug. 2019 – May 2023

- GPA: 8.6/10
- Relevant coursework: Discrete Mathematics; Differential Equations and Transforms; Theory of Computation; Artificial Intelligence; Data Warehousing & Data Mining; Machine Learning; Big Data Analytics; Deep Learning.

Research Interests

Generative Vision; Natural Language Processing; Vision-Language Action; Reinforcement Learning; Explainable AI

Preprints & Publications

** denotes equal contribution*

1. **Aditya Taparia**, Som Sagar, Ransalu Senanayake. Explainable Concept Generation through Vision-Language Preference Learning for Understanding Neural Networks' Internal Representations. *International Conference on Machine Learning (ICML)*, 2025.
2. Som Sagar*, **Aditya Taparia***, Harsh Mankodiya, Pranav Bidare, Yifan Zhou, Ransalu Senanayake. Trustworthy Explanations for Robot Behaviors. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2025.
3. **Aditya Taparia**, Noel Ngu, Mario Leiva, Joshua Shay Kricheli, John Corcoran, Nathaniel D. Bastian, Gerardo Simari, Paulo Shakarian, Ransalu Senanayake. VLC Fusion: Vision-Language Conditioned Sensor Fusion for Robust Object Detection. *In Submission*, 2025.
4. Joshua Tint, Som Sagar, **Aditya Taparia**, Caleb Liu, Kelly Raines, Bimsara Pathiraja, Ransalu Senanayake. ExpressivityArena: Can LLMs Express Information Implicitly?. *NeurIPS Workshop on Behavioral Machine Learning*, 2024.
5. Som Sagar, **Aditya Taparia**, Ransalu Senanayake. LLM-Assisted Red Teaming of Diffusion Models through "Failures Are Fated, But Can Be Faded". *NeurIPS Workshop on Red Teaming GenAI: What Can We Learn from Adversaries?*, 2024.
6. Som Sagar, **Aditya Taparia**, Ransalu Senanayake. Failures Are Fated, But Can Be Faded: Characterizing and Mitigating Unwanted Behaviors in Large-Scale Vision and Language Models. *International Conference on Machine Learning (ICML)*, **Spotlight (top 3.5%)**, 2024.
7. **Aditya Taparia**, Ali Kashif Bashir, Yaodong Zhu, Thippa Reddy Gdekallu, Keshab Nath. Transforming satellite imagery into vector maps using modified GANs. *Alexandria Engineering Journal, Elsevier*, 2024.

Experience

Student Intern May 2025 – Present

Lawrence Livermore National Laboratory

- Mentored by Vivek Narayanaswamy and Kowshik Thopalli.
- Working on quantifying uncertainty in large generative models.

Graduate Research Assistant Nov. 2023 – Present

Laboratory for Learning Evaluation of autoNomous Systems (LENS)

- Advised by Ransalu Senanayake.
- Working at the intersection of concept-based interpretability and generative modeling, focusing on how neural networks internalize and act upon high-level abstractions in dynamic environments.

Awards & Honors

SCAI Conference Award, School of Computing and Augmented Intelligence 2025

Graduate College Travel Award, Arizona State University 2025

NeurIPS Travel Award, Interpretable AI Workshop 2024

NeurIPS Financial Grant, Behavior ML Workshop 2024

Spotlight-designated Paper, International Conference on Machine Learning 2024

Engineering Graduate Fellowship, Arizona State University 2023 – 2024

Intra IIIT Hackthon Winner, Indian Institute of Information Technology 2021

Services

Reviewers for: *RSS Workshop on Robot Evaluation for the Real World 2025*, *International Conference on Intelligent Robots and Systems (IROS) 2025*, *International Conference on Learning Representations (ICLR) 2025*.

Teaching

- **Teaching Assistant**, CSE 475: Foundations of Machine Learning. Fall 2024
- **Teaching Assistant**, CSE 563: Software Requirements and Specification. Spring 2024

Skills

Programming Languages: Python, C, C++, Dart, JavaScript, HTML/CSS.

Frameworks: PyTorch, TensorFlow, NumPy, Pandas, Captum, Stable Baselines, Diffusers, Transformers, NLTK, Gymnasium, Flutter.

Database and Cloud Services: Firebase, MongoDB, MySQL.