Avishree Khare

PhD Student, Computer and Information Science
University of Pennsylvania

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Education

Ph.D. in Computer and Information Science   Fall 2023 – Present
University of Pennsylvania
Advisor: Rajeev Alur

B.E. (Hons) in Computer Science   Fall 2017 – Spring 2021
BITS Pilani, K. K. Birla Goa Campus

Research Statement

AI-powered systems have made significant advancements in tasks such as video generation and automated code editing. However, the reliability of these methods remains an open challenge, particularly in applications that require safe, trustworthy, and explainable behavior. My research addresses this challenge by integrating techniques from Formal Methods to improve the predictability and robustness of AI systems. Current work focuses on (a) enhancing video understanding through symbolic reasoning, (b) ensuring strict rule compliance in generative models, and (c) extending the reasoning capabilities of generative models to support complex software engineering tasks.

Publications   (* = equal contribution)

Instruction Following by Boosting Attention of Large Language Models
Vitoria Guardieiro*, Avishree Khare*, Adam Stein*, and Eric Wong
(★ *Spotlight*) *Mechanistic Interpretability Workshop, NeurIPS* 2025

LogSTOP: Temporal Scores over Prediction Sequences for Matching and Retrieval
Avishree Khare, Hideki Okamoto, Bardh Hoxha, Georgios Fainekos, and Rajeev Alur
NextVid Workshop, NeurIPS 2025

Logicbreaks: A framework for understanding subversion of rule-based inference
Anton Xue*, Avishree Khare*, Rajeev Alur, Surbhi Goel, and Eric Wong
International Conference on Learning Representations (ICLR) 2025

Boss LLM: Adaptation via No-Regret Learning
Yu Feng*, Avishree Khare*, Nghia Nguyen*, and Sikata Bela Sengupta*
Workshop on Scaling Self-Improving Foundation Models without Human Supervision, ICLR 2025

Understanding the effectiveness of LLMs in detecting security vulnerabilities
Avishree Khare*, Saikat Dutta*, Ziyang Li, Alaia Solko-Breslin, Rajeev Alur, and Mayur Naik
2025 IEEE Conference on Software Testing, Verification and Validation (ICST) 2025

Grace: Language models meet code edits
Priyanshu Gupta*, Avishree Khare*, Yasharth Bajpai, Saikat Chakraborty, Sumit Gulwani, Aditya Kanade, Arjun Radhakrishna, Gustavo Soares, and Ashish Tiwari
Proceedings of the 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) 2023

Industry Experience

Research Fellow, Microsoft (PROSE)	2022-2023
Software Engineer, Google (Cloud Storage)	2021-2022
Software Engineering Intern, Apple	2021

Teaching Experience

Teaching Assistant, Mathematics of Machine Learning (CIS 3333)	Fall 2024
Teaching Assistant, Neuromatch Deep Learning School	July 2021
Teaching Assistant, Machine Learning (BITS F464)	Fall 2020

Awards and Honors

Toyota ASSET Fellow	2024-2025
Lisa P. Yu Fellow, University of Pennsylvania	2023-2024
Institute Merit Scholarship, BITS Pilani K. K. Birla Goa campus	Spring 2021
Institute Merit Scholarship, BITS Pilani K. K. Birla Goa campus	Fall 2020

Service

Reviewer	ICLR 2026 (ongoing), NeurIPS 2025, ICLR 2025 (SSI-FM Workshop)
Sub-reviewer	HSCC 2025
Co-President, CIS Doctoral Association (CISDA), UPenn	Fall 2024-Present
Mentor, CIS PhD Mentorship Program, UPenn	2024