

Aashish Yadavally

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Department of Computer Science
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Overview

I am a researcher in the field of Artificial Intelligence for Software Engineering (AI4SE), specializing in optimizing software development processes. My recent work focuses on using large language models for understanding how programs behave, and improving security in software systems.

Focus Areas: AI for {Program Analysis, Software Security, Software Evolution}

Employment

2025–now **Assistant Professor**, *The University of Central Florida*.
Department of Computer Science

Previous Research Experience

2024 **Applied Scientist Intern**, *AWS AI Labs*.
Builder Tools Science / Next Gen Developer Experience
◦ *Hosted By:* Gauthier Guinet, Hoan A. Nguyen

2022 – 2024 **Graduate Research Assistant**, *The University of Texas at Dallas*.
AI for Software Engineering
◦ *Advisor:* Dr. Tien N. Nguyen

2018 – 2020 **Graduate Research Assistant**, *The University of Georgia*.
Institute for Artificial Intelligence
◦ *Advisor:* Dr. Frederick Maier

2018 **Undergraduate Research Assistant**, *IIIT Hyderabad*.
Language Technologies Research Center
◦ *Advisor:* Dr. Anil Vuppula

2017 **Undergraduate Research Assistant**, *DA-IICT Gandhinagar*.
Speech Research Lab
◦ *Advisor:* Dr. Hemant A. Patil

Education

2020 – 2025 **Doctor of Philosophy**, Computer Science
The University of Texas at Dallas *Advisor:* Dr. Tien N. Nguyen
Dissertation: “Neural Modeling of Reasoning about Program Behaviors”
Committee: Dr. Wei Yang and Dr. Shiyi Wei (The University of Texas at Dallas)
Dr. Baishakhi Ray (Columbia University)

2018 – 2020 **Master of Science**, Artificial Intelligence
The University of Georgia *Advisor:* Dr. Frederick Maier
Thesis: Machine Learning Techniques for Solar Irradiance Prediction

2014 – 2018 **Bachelor of Technology**, Computer Science
Indian Institute of Information Technology Vadodara *Advisor:* Dr. Anil Vuppula
Capstone Project: “Automatic Speech Recognition using Deep Learning”

Honors & Awards

Paper Awards

- 2024 **ACM SIGSOFT Distinguished Paper Award** at the 31st ACM International Conference on the Foundations of Software Engineering (FSE 2024).
- 2023 Nomination for the **ACM SIGSOFT Distinguished Paper Award** at the 45th IEEE/ACM International Conference on Software Engineering (ICSE 2023).
- 2022 **IEEE TCSE Distinguished Paper Award** at the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022).

Recognition

- 2024 **Distinguished Junior PC Reviewer Award** at the 21st International Conference on Mining Software Repositories (MSR 2024).
- 2021 *First Prize*, Project Dazzle, AI Camp Hackathon
- 2016 *First Prize in Public Voting Category*, IIITV Hackathon

Grants & Scholarships

- {2024, 2023} ACM SIGSOFT CAPS Travel Award of USD 500 for FSE 2024, USD 400 for ESEC/FSE 2023, and USD 500 for ICSE 2023.
- 2023 NSF Student Travel Grant for MAPS Workshop 2023.
- {2019 – 2020, 2018 – 2019} *Research Scholarship* including a full tuition remission, from the *Institute for Artificial Intelligence* at the University of Georgia (one of three chosen M.S. students).

Publications

(* denotes equal contribution, § denotes mentorship experience)

Published 19 peer-reviewed papers (16 full, 3 short)¹accepted at top-tier venues in software engineering (ICSE, FSE, ASE), and programming languages (OOPSLA). My work can be categorized into the following thrusts of research:

- [T1] LLMs for Reasoning on Source Code (C11–C15, J3)
- [T2] Artificial Intelligence for Program Analysis (C5, C6, J1, J2, J4)
- [T3] Artificial Intelligence for Software Security (C4, C7–C10)
- [T4] Source Code Manipulation for Software Engineering Applications (C1–C3)

► Journal Papers

- [J4] [FSE'25] Yi Li, Hridya Dhulipala, **Aashish Yadavally**, Xiaokai Rong, Shaohua Wang, and Tien N. Nguyen. 2025. Blended Analysis for Predictive Execution. In 32nd ACM International Conference on the Foundations of Software Engineering.
- [J3] [FSE'25] Hridya Dhulipala, **Aashish Yadavally**§, Smit Soneshbai Patel, and Tien N. Nguyen. 2025. CRISPE: Semantic-Guided Execution Planning and Dynamic Reasoning for Enhancing Code Coverage Prediction. In 32nd ACM International Conference on the Foundations of Software Engineering.
- [J2] [OOPSLA'24] **Aashish Yadavally**, Yi Li, Shaohua Wang and Tien N. Nguyen. 2024. A Learning-Based Approach to Static Program Slicing. In Proceedings of the 2024 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications.

¹Full papers indicated with , and short papers with

- [J1] **[FSE'24] Aashish Yadavally**, Yi Li, and Tien N. Nguyen. 2024. Predictive Program Slicing via Execution Knowledge-Guided Dynamic Dependence Learning. In 31st ACM International Conference on the Foundations of Software Engineering.
★ **ACM SIGSOFT Distinguished Paper Award**

► **Conference Papers**

- [C15] **[ICSE'26] Aashish Yadavally**, and Tien N. Nguyen. 2026. From Seed to Scope: Reasoning to Identify Change Impact Sets. In 48th IEEE/ACM International Conference on Software Engineering. (*Major Revision*).
- [C14] **[ICSE'26] Aashish Yadavally***, Xiaokai Rong*, and Tien N. Nguyen. 2026. Large Language Model-Aided Partial Program Dependence Analysis. In 48th IEEE/ACM International Conference on Software Engineering. (*Major Revision*).
- [C13] **[ICSE'25] Aashish Yadavally**, Xiaokai Rong, Phat Nguyen, and Tien N. Nguyen. 2025. Large Language Models for Safe Minimization. In 47th IEEE/ACM International Conference on Software Engineering.
- [C12] **[ICSE'25] Smit Patel, Aashish Yadavally[§]**, Hridya Dhulipala and Tien N. Nguyen. 2024. Planning a Large Language Model for Static Detection of Runtime Errors in Code Snippets. In 47th IEEE/ACM International Conference on Software Engineering.
- [C11] **[FORGE'24] Hridya Dhulipala, Aashish Yadavally[§]**, and Tien N. Nguyen. 2024. Planning to Guide LLM for Code Coverage Prediction. In 1st International Conference on AI Foundation Models and Software Engineering.
- [C10] **[ICSE'24] Yuchen Cai, Aashish Yadavally[§]**, Abhishek Mishra, Genesis Montejo, and Tien N. Nguyen. 2024. Programming Assistant for Exception Handling with CodeBERT. In 46th IEEE/ACM International Conference on Software Engineering.
- [C9] **[ICSE'24 - Poster] Yi Li, Tien N. Nguyen, Yuchen Cai, Aashish Yadavally**, Abhishek Mishra, and Genesis Montejo. 2024. Neural Exception Handling Recommender. In 46th IEEE/ACM International Conference on Software Engineering: Posters Track
- [C8] **[ICSE'24 - Poster] Yi Li, Tien N. Nguyen, Shaohua Wang, and Aashish Yadavally**. 2024. Poirot: Deep Learning for API Misuse Detection. In 46th IEEE/ACM International Conference on Software Engineering: Posters Track
- [C7] **[ESEC/FSE'23] Yi Li, Aashish Yadavally**, Jiaxing Zhang, Shaohua Wang, and Tien N. Nguyen. 2023. Commit-Level, Neural Vulnerability Detection and Assessment. In 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering.
- [C6] **[ESEC/FSE'23] Yi Li, Aashish Yadavally**, Jiaxing Zhang, Shaohua Wang, and Tien N. Nguyen. 2023. DeMinify: Neural Variable Name Recovery and Type Inference. In 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering.
- [C5] **[ICSE'23] Aashish Yadavally**, Wenbo Wang, Shaohua Wang, and Tien N. Nguyen. 2023. (Partial) Program Dependence Learning. In 45th IEEE/ACM International Conference on Software Engineering.
★ **Nomination for ACM SIGSOFT Distinguished Paper Award**
- [C4] **[ICSE'23] Wenbo Wang, Tien N. Nguyen, Shaohua Wang, Yi Li, Jiyuan Zhang, and Aashish Yadavally**. 2023. DeepVD: Towards Class-Separation Features for Neural Network Vulnerability Detection. In 45th IEEE/ACM International Conference on Software Engineering.

- [C3] **[ASE'22]** Hoan Anh Nguyen, Hung Phan, Samantha Syeda Khairunnesa, Son Nguyen, **Aashish Yadavally**, Shaohua Wang, Hridesh Rajan, and Tien N. Nguyen. 2022. A Hybrid Approach for Inference between Behavioral Exception API Documentation and Implementations, and Its Applications. In 37th IEEE/ACM International Conference on Automated Software Engineering.
- [C2] **[ASE'22 - NIER]** Anh Nguyen, **Aashish Yadavally**, and Tien N. Nguyen. 2022. Next Syntactic-Unit Code Completion and Applications. In 37th IEEE/ACM International Conference on Automated Software Engineering: New Ideas and Emerging Results (NIER) Track.
- [C1] **[SANER'22]** Thang V. Nguyen, **Aashish Yadavally**, and Tien N. Nguyen. 2022. Phrase2Set: Phrase-to-Set Machine Translation and Its Software Engineering Applications. In 29th IEEE International Conference on Software Analysis, Evolution and Reengineering.
★ IEEE TCSE Distinguished Paper Award

► **Conference Papers – Submitted, Under Review**

- [U1] **Aashish Yadavally**, Hoan Nguyen, Laurent Callot, and Gauthier Guinet. 2025. Large Language Model Critics for Execution-Free Evaluation of Code Changes.

► **Ph.D. Dissertation**

Aashish Yadavally. 2025. Neural Modeling of Reasoning about Program Behaviors. In University of Texas at Dallas ProQuest Dissertations Publishing.

► **Masters Thesis**

Aashish Yadavally. 2020. An Exploration of Machine Learning Based Day-Ahead Solar Irradiance Forecasting Methodologies. In University of Georgia ProQuest Dissertations Publishing.

Teaching Experience

- 2025 **Instructor**, *University of Central Florida*.
 ◦ {Fall 2025, Spring 2026} - Processes for Object Oriented Software Development
- 2024 **Graduate Teaching Assistant**, *The University of Texas at Dallas*.
- 2020 – 2022 ◦ {Spring 2025} - Software Engineering
 ◦ {Fall 2024, Spring 2021} - Automata Theory
 ◦ {Spring 2022, Fall 2021} - Digital Logic and Computer Design
 ◦ {Fall 2020} - Probability and Statistics in Computer Science and Software Engineering
 ◦ {Fall 2020} - Convolutional Neural Networks
- 2021 **Associate Instructor**, *A.I. Camp*.
*Courses: Natural Language Processing, Computer Vision*²

Mentoring Experience

- 2024 – 2025* **Marilyn Rego**, *Purdue University*.
 SIGPLAN-M Mentee
- 2024 – 2025* **Akshit Kumar**, *International Institute of Information Technology, Hyderabad*.
 SIGPLAN-M Mentee
- 2023 **Abhishek Mishra**, *The University of Texas at Dallas*.
 Undergraduate Student
 2 co-authored papers at the International Conference on Software Engineering (ICSE'24)

²Average daily rating of 4.61, 4.6, and 4.81 out of 5 across three batches

- 2023 **Genesis Montejo**, *The University of Texas at Dallas*.
Undergraduate Student
2 co-authored papers at the International Conference on Software Engineering (ICSE'24)

Talks & Presentations

Invited Talks

- 08/2025 "*THE Handbook to Success (TL;DR Mostly Failing, Learning, and Trying Again)*", Alumni Connect, **Indian Institute of Information Technology Vadodara**.
- 03/2025 "*Can Large Language Models Reason about Program Behaviors?*", **Department of Electrical and Computer Engineering - University of Arizona**.
- 03/2025 "*Can Large Language Models Reason about Program Behaviors?*", **Department of Computer Science - University of Vermont**.
- 02/2025 "*Can Large Language Models Reason about Program Behaviors?*", **School of Computing - Binghamton University**.
- 02/2025 "*Can Large Language Models Reason about Program Behaviors?*", **Department of Computer Science - University of Central Florida**.
- 02/2025 "*Can Large Language Models Reason about Program Behaviors?*", **School of Electrical Engineering and Computer Science - Washington State University**.
- 06/2024 "*Learning to Analyze Program Behaviors*", **Doctoral Symposium - FSE 2024**.
- 01/2024 "*Contextuality of Code Representation Learning*".
Trux Open Online Seminar (TOOS), University of Luxembourg
Hosts: Prof. Dr. Jacques Klein, Prof. Dr. Tegawendé Bissyandé

Paper Presentations

- 10/2024 "*A Learning-Based Approach to Static Program Slicing*", **OOPSLA 2024**.
- 06/2024 "*Predictive Program Slicing via Execution Knowledge-Guided Dynamic Dependence Learning*", **FSE 2024**.
- 01/2024 "*Commit-level, Neural Vulnerability Detection and Assessment*", **ESEC/FSE 2023**.
- 01/2024 "*DeMinify: Neural Variable Name Recovery and Type Inference*", **ESEC/FSE 2023**.
- 05/2023 "*(Partial) Program Dependence Learning*", **ICSE 2023**.
- 05/2023 "*DeepVD: Toward Class-Separation Features for Neural Network Vulnerability Detection*", **ICSE 2023**.
- 10/2022 "*Next Syntactic-Unit Code Completion and Applications*", **ASE 2022**.
- 03/2022 "*Phrase2Set: Phrase-to-Set Machine Translation and Its Software Engineering Applications*", **SANER 2022**.

Poster Presentations

- 06/2024 "*Predictive Program Slicing via Execution Knowledge-Guided Dynamic Dependence Learning*", **FSE 2024**.
- 05/2023 "*(Partial) Program Dependence Learning*", **ICSE 2023**.
- 12/2019 "*Sentiment Analysis-Based Language Model Evaluation*".
The Linguistics Final Project Poster Conference, University of Georgia
- 10/2019 "*Solar Irradiance Prediction Using Distributed Machine Learning Techniques*".
UGA Computer Science Research Day

Service

Leadership and Academic Service

- ISSTA **International Symposium on Software Testing and Analysis.**
 ○ 2026 - Program Committee, *Research Track*.
- ICLR **International Conference on Learning Representations.**
 ○ 2026 - Reviewer, *Research Track*.
 ○ 2025 - Reviewer, *Research Track*.
- FORGE **International Conference on AI Foundation Models and Software Engineering.**
 ○ 2026 - Program Committee, *Research Track*.
- EASE **International Conference on Evaluation and Assessment in Software Engineering.**
 ○ 2026 - Program Committee, *AI Models/Data Track*.
 ○ 2025 - Program Committee, *AI Models/Data Track*.
- ICSE **International Conference on Software Engineering.**
 ○ 2025 - Shadow Program Committee, *Technical Track*.
 ○ 2024 - Program Committee, *Artifact Evaluation Track*.
- ICSME **International Conference on Software Maintenance and Evolution.**
 ○ 2025 - Program Committee, *Artifact Evaluation Track*.
- DL4C@NeurIPS **Deep Learning for Code Workshop at NeurIPS.**
 ○ 2025 - Reviewer, *Research Track*.
- MSR **International Conference on Mining Software Repositories.**
 ○ 2024 - Junior Program Committee, *Technical Track*.
 ★ Distinguished Junior PC Reviewer Award
 ○ 2023 - Junior Program Committee, *Technical Track*
- SIGPLAN-M **Special Interest Group in Programming Languages.**
Mentor.
- TSE **IEEE Transactions on Software Engineering.**
 (Journal) *Reviewer.*
- EMSE **Empirical Software Engineering.**
 (Journal) *Reviewer.*

University/Department Service

- 10/2025 **Panelist**, “*AI, Human Touch, and Future of Work*”.
 Rosen College of Hospitality Management, University of Central Florida
- 10/2025 **Committee Member**, *2025-2026 Faculty Excellence Awards*.
 Department of Computer Science, University of Central Florida

References

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<i>Associate Professor</i>
The University of Texas at Dallas
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| ○ Dr. Baishakhi Ray
<i>Associate Professor</i>
Columbia University
rayb@cs.columbia.edu | ○ Dr. Omer Tripp
<i>Principal Applied Scientist</i>
AWS AI Labs
omertrip@amazon.com |