

# Aashish Yadavally

Assistant Professor  
Department of Computer Science  
The University of Central Florida

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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

- 2023–2024 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 20 peer-reviewed papers accepted at top-tier venues in software engineering (9 × ICSE, 5 × FSE, 2 × ASE), and programming languages (2 × OOPSLA).

- [J5] **[OOPSLA'26]** Yan Wang, Ling Ding, Jiechen Sun, Tien N. Nguyen, Shaohua Wang, **Aashish Yadavally**, Xin Xia, Yanan Zheng. 2026. T-REX: Teaching Large Language Models to Reason with Verbalized Execution Rationales. In Proceedings of the 2026 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications. (*Major Revision*).
- [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. (*To Appear*).
- [C14] **[ICSE'26]** **Aashish Yadavally**<sup>\*</sup>, Xiaokai Rong<sup>\*</sup>, and Tien N. Nguyen. 2026. Large Language Model-Aided Partial Program Dependence Analysis. In 48th IEEE/ACM International Conference on Software Engineering. (*To Appear*).
- [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**<sup>§</sup>, 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.
- [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**<sup>S</sup>, 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.
- [I1] **Aashish Yadavally**, Hoan Nguyen, Laurent Callot, and Gauthier Guinet. 2025. Large Language Model Critics for Execution-Free Evaluation of Code Changes.
- [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.
- [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**
- [C11] **[FORGE'24]** Hridya Dhulipala, **Aashish Yadavally**<sup>S</sup>, 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**<sup>S</sup>, 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

- **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

### As Instructor of Record

University of Central Florida

Fall 2025 COP 4331C - Processes for Object Oriented Software Development.  
Overall Teaching Evaluation: 4.62 out of 5.0 (13 of 86 students reporting)  
Department Mean: 4.34; College Mean: 4.27

### As Teaching Assistant

University of Texas at Dallas

Spring 2025 SE 6329 - Software Engineering.  
Spring 2022 CS 4341 - Digital Logic and Computer Design.  
Fall 2021 CS 4341 - Digital Logic and Computer Design.  
Spring 2021 CS 4384 - Automata Theory.  
Fall 2020 CS 3441 - Probability and Statistics in Computer Science and Software Engineering.  
Fall 2020 CS 6301 - Convolutional Neural Networks.

### As Associate Instructor

A.I. Camp

Summer 2021 *Courses:* Natural Language Processing, Computer Vision.  
Average daily rating of 4.61, 4.6, and 4.81 out of 5 across three batches

## Advising & Mentoring

### Doctoral Students

2025–now Eshgin Hasanov, *University of Central Florida*.

### Undergraduate Students

2025–now Seth Jones, *University of Central Florida*.  
2023–2024 Abhishek Mishra, *University of Texas at Dallas*.  
2 co-authored papers at ICSE'24 (C9, C10)  
2023–2024 Genesis Montejo, *University of Texas at Dallas*.  
2 co-authored papers at ICSE'24 (C9, C10)

### Professional Mentorship

2024–2025 Marilyn Rego, *Purdue University*.  
SIGPLAN-M

2024–2025 Akshit Kumar, *International Institute of Information Technology, Hyderabad*.  
SIGPLAN-M

### **Ph.D. Dissertation Committees**

2025–now Sanan Hasanov, *University of Central Florida*.  
Committee Member

### **Honors Thesis Committees**

2025–now Ryan Garfinkel, *University of Central Florida*.  
Committee Member

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## **Talks & Presentations**

- 03/2025 **Invited Seminar Talk**, *University of Arizona*.  
“Can Large Language Models Reason about Program Behaviors?”
- 03/2025 **Invited Seminar Talk**, *University of Vermont*.  
“Can Large Language Models Reason about Program Behaviors?”
- 02/2025 **Invited Seminar Talk**, *Binghamton University*.  
“Can Large Language Models Reason about Program Behaviors?”
- 02/2025 **Invited Seminar Talk**, *University of Central Florida*.  
“Can Large Language Models Reason about Program Behaviors?”
- 02/2025 **Invited Seminar Talk**, *Washington State University*.  
“Can Large Language Models Reason about Program Behaviors?”
- 10/2024 **Research Paper Presentation**, *OOPSLA’24*, Pasadena, USA.  
“A Learning-Based Approach to Static Program Slicing”
- 06/2024 **Doctoral Symposium Presentation**, *FSE’24*, Porto de Galinhas, Brazil.  
“Learning to Analyze Program Behaviors”
- 06/2024 **Poster Presentation**, *FSE’24*, Remote.  
“Predictive Program Slicing via Execution Knowledge-Guided Dynamic Dependence Learning”
- 06/2024 **Research Paper Presentation**, *FSE’24*, Porto de Galinhas, Brazil.  
“Predictive Program Slicing via Execution Knowledge-Guided Dynamic Dependence Learning”
- 01/2024 **Invited Talk**, *Trux Open Online Seminar (TOOS)*, University of Luxembourg.  
Hosts: Prof. Dr. Jacques Klein, Prof. Dr. Tegawendé Bissyandé  
“Contextuality of Code Representation Learning”
- 01/2024 **Research Paper Presentation**, *ESEC/FSE’23*, San Francisco, USA.  
“Commit-level, Neural Vulnerability Detection and Assessment”
- 01/2024 **Research Paper Presentation**, *ESEC/FSE’23*, San Francisco, USA.  
“DeMinify: Neural Variable Name Recovery and Type Inference”
- 05/2023 **Poster Presentation**, *ICSE’23*, Melbourne, Australia.  
“(Partial) Program Dependence Learning”
- 05/2023 **Research Paper Presentation**, *ICSE’23*, Melbourne, Australia.  
“(Partial) Program Dependence Learning”
- 05/2023 **Research Paper Presentation**, *ICSE’23*, Melbourne, Australia.  
“DeepVD: Toward Class-Separation Features for Neural Network Vulnerability Detection”
- 10/2022 **Research Paper Presentation**, *ASE’22*, Oakland Center, USA.  
“Next Syntactic-Unit Code Completion and Applications”
- 03/2022 **Research Paper Presentation**, *SANER’22*, Remote.  
“Phrase2Set: Phrase-to-Set Machine Translation and Its Software Engineering Applications”

- 12/2019 **Poster Presentation**, *The Linguistics Final Project Poster Conference - University of Georgia*, Athens, USA.  
 "Sentiment Analysis-Based Language Model Evaluation"
- 12/2019 **Poster Presentation**, *UGA Computer Science Research Day*, Athens, USA.  
 "Solar Irradiance Prediction Using Distributed Machine Learning Techniques"

## Professional Service

### Leadership and Academic Service

- ISSTA **International Symposium on Software Testing and Analysis.**  
 o 2026 - Program Committee, *Research Track*.
- ICLR **International Conference on Learning Representations.**  
 o 2026 - Reviewer, *Research Track*.  
 o 2025 - Reviewer, *Research Track*.
- FORGE **International Conference on AI Foundation Models and Software Engineering.**  
 o 2026 - Program Committee, *Research Track*.  
 o 2026 - Program Committee, *Data and Benchmarking Track*.
- EASE **International Conference on Evaluation and Assessment in Software Engineering.**  
 o 2026 - Program Committee, *AI Models/Data Track*.  
 o 2025 - Program Committee, *AI Models/Data Track*.
- ICSE **International Conference on Software Engineering.**  
 o 2025 - Shadow Program Committee, *Technical Track*.  
 o 2024 - Program Committee, *Artifact Evaluation Track*.
- ICSME **International Conference on Software Maintenance and Evolution.**  
 o 2025 - Program Committee, *Artifact Evaluation Track*.
- DL4C@NeurIPS **Deep Learning for Code Workshop at NeurIPS.**  
 o 2025 - Reviewer, *Research Track*.
- MSR **International Conference on Mining Software Repositories.**  
 o 2024 - Junior Program Committee, *Technical Track*.  
 ★ Distinguished Junior PC Reviewer Award  
 o 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

## Community Outreach & Engagement

- 10/2025 **2025 CS Graduate Studies Symposium**, *University of Central Florida*.  
 "Artificial Intelligence in Software Engineering"

08/2025 **Alumni Connect**, *Indian Institute of Information Technology Vadodara*.  
“THE Handbook to Success (TL;DR Mostly Failing, Learning, and Trying Again)”

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## Professional Affiliations

2022–now **Association for Computing Machinery**, *ACM*.

- Special Interest Group on Software Engineering (SIGSOFT)

2022–now **Institute of Electrical and Electronics Engineers**, *IEEE*.

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## References

- **Dr. Tien N. Nguyen**

*Professor*

The University of Texas at Dallas

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- **Dr. Wei Yang**

*Associate Professor*

The University of Texas at Dallas

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- **Dr. Baishakhi Ray**

*Associate Professor*

Columbia University

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- **Dr. Omer Tripp**

*Principal Applied Scientist*

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