ADITYA ANAND

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Mumbai, Maharashtra - 400076, India

RESEARCH INTEREST

My research area is compilers, programming languages, and program analysis. I am interested in developing efficient and precise static+dynamic program-analysis techniques, with a current emphasis on developing a robust static+dynamic model for optimizing object allocation in Java.

EDUCATION

- **Indian Institute of Technology Bombay**   *May 2023 - Ongoing*
  Doctor of Philosophy (Ph.D.), Computer Science and Engineering   Mumbai, India
  ◦ GPA: 8.82/10.00

- **Indian Institute of Technology Mandi**   *September 2020 - April 2023*
  Doctor of Philosophy (Ph.D.), Computer Science and Engineering – (Transfer to IIT B)   Mandi, India
  ◦ GPA: 8.82/10.00

- **Visvesvaraya Technological University**   *August 2015 - June 2019*
  Bachelor of Engineering (B.E), Computer Science and Engineering   Belagavi, India
  ◦ GPA: 9.52/10.00

PUBLICATIONS   C=CONFERENCE, J=JOURNAL

[J3]: **Aditya Anand**, Vijay Sundaresan, Daryl Maier and Manas Thakur. **CoSSJIT: Combining Static Analysis and Speculation in JIT Compilers"**. In *Proceedings of the ACM on Programming Languages (OOPSLA), Singapore, October 16-18, 2025.* DOI: 10.1145/3763149

[J2]: **Aditya Anand** and Manas Thakur. **Partial Program Analysis for Staged Compilation Systems**. In *Formal Methods in System Design (FMSD)*, Springer, 2024. DOI: 10.1007/s10703-024-00458-x

[J1]: **Aditya Anand**, Solai Adithya, Swapnil Rustagi, Priyam Seth, Vijay Sundaresan, Daryl Maier, V. Krishna Nandivada, and Manas Thakur. **Optimistic Stack Allocation and Dynamic Heapification for Managed Runtimes**. In *Proceedings of the ACM on Programming Languages (PLDI)*, Copenhagen, Denmark, June 24-28, 2024. DOI: 10.1145/3656389

[C1]: **Aditya Anand** and Manas Thakur. **Principles of Staged Static+Dynamic Partial Analysis**. In *Proceedings of the 29th Static Analysis Symposium (SAS)*, Auckland, New Zealand, December 5th-10th, 2022. DOI: 10.1007/978-3-031-22308-2_4

Invited to appear in Formal Methods in System Design (FMSD)

POSTERS   P=POSTERS

[P3]: **Aditya Anand et. al**. **CoSSJIT: Combining Static Analysis and Speculation in JIT Compilers**. Poster in the Object-Oriented Programming, Systems, Languages & Applications (OOPSLA) co-located with SPLASH 2025, Singapore, October 16-18, 2025.

[P2]: **Aditya Anand et. al**. **Optimistic Stack Allocation and Dynamic Heapification for Manged Runtimes**. Poster in the Academic Research and Careers for Students (ARCS), ACM India, Coimbatore, India Feburary 27th-28th, 2025.

[P1]: **Aditya Anand**. **A Study of the Impact of Callbacks in Staged Static+Dynamic Partial Analysis**. In *Companion Proceedings of the 2022 ACM SIGPLAN International Conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH Companion)*, Auckland, New Zealand, December 5th-10th, 2022. DOI: 10.1145/3563768.3563957

TEACHING EXPERIENCE

- **Teaching Assistant, CS6004: Code Optimization for Object-Oriented Languages, IIT Bombay**   *Spring 2026*
- **Teaching Assistant, CS339+CS355: Abstractions and Paradigms for Programming, IIT Bombay**   *Fall 2025*
- **Teaching Assistant, CS614: Advanced Compilers, IIT Bombay**   *Spring 2025*
- **Teaching Assistant, CS339+CS355: Abstractions and Paradigms for Programming, IIT Bombay**   *Fall 2024*
- **Teaching Assistant, CS6004: Code Optimization for Object-Oriented Languages, IIT Bombay**   *Spring 2024*
- **Teaching Assistant, CS614: Advanced Compilers, IIT Bombay**   *Fall 2023*
- **Teaching Assistant, CS515: Advanced Computer Science Practicum, IIT Mandi**   *Fall 2022*
- **Teaching Assistant, CS611: Program Analysis, IIT Mandi**   *Spring 2022*
- **Teaching Assistant, CS502: Compiler Design, IIT Mandi**   *Fall 2022*
- **Teaching Assistant, CS302: Paradigms of Programming, IIT Mandi**   *Spring 2021*

PROFESSIONAL EXPERIENCE

- **Artifact Evaluation Committee Member:**
  - ○ Object-Oriented Programming, Systems, Languages & Applications (OOPSLA 2026)
  - ○ European Conference on Object-Oriented Programming (ECOOP 2025)
  - ○ Programming Language Design and Implementation (PLDI 2024).
  - ○ European Conference on Object-Oriented Programming (ECOOP 2024)

AWARDS

ACM/IARCS Travel Grant.	*2025*
George B. Fernandes Award, Excellence in PhD Research Progress, IIT Bombay.	*2025*
Excellence in Teaching Assistantship, IIT Bombay.	*Spring 2024*
ACM/IARCS Travel Grant.	*2024*
SIGPLAN Fellowship, PLMW and PLDI 2024.	*2024*
Poster Presentation winner RISC 24, IIT Bombay.	*2024*
Excellence in Teaching Assistantship, IIT Bombay.	*Fall 2023*
GATE Fellowship,Government of India.	*2020*
4th rank in B.E, Department of Computer Science, VTU, Belgavi, Karnataka.	*2019*
1st rank in Inter College Technical Quiz Competition.	*2018*
Awarded Rajya Puraskar in Bharat Scouts and Guides.	*2013*

SKILLS

- **Programming Languages:** C, C++, Java, Scheme, Haskell.
- **Web Technologies:** HTML 5, CSS, Flask, and W3 CSS framework.
- **Scripting:** Bash and Awk.
- **Other Tools & Technologies:** Git, Docker.
- **Compiler frameworks/tools:** JavaCC/JTB, Soot, OpenJ9 VM.

RELEVANT COURSES

- Compiler Design	Verification of Reactive Systems
- Reactive Design Patterns	Computer Architecture
- Program Analysis	Discrete Mathematics
- Data Structure and Algorithm - II	Language Engineering for Complex Programs: A C++ Perspective

TALKS

- **Talk on "CoSSJIT: Combining Static Analysis and Speculation in JIT Compilers." at RHPL 2025.**
- **Presented "CoSSJIT: Combining Static Analysis and Speculation in JIT Compilers." at OOPSLA 2025.**
- **Talk on "Combining Static Analysis and Speculations in JIT Compilers" at IICT 2025.**
- **Talk on "Program Analysis for Managed Runtimes in Presence of Dynamic Features" at IICT 2024.**
- **Talk on "Optimistic Stack Allocation and Dynamic Heapification for Managed Runtimes." at ComputerSysTalks@India.**
- **Talk on "Optimistic Stack Allocation and Dynamic Heapification for Managed Runtimes." at SERI 2024.**
- **Presented "Optimistic Stack Allocation and Dynamic Heapification for Managed Runtimes." at PLDI 2024.**
- **Talk on "Staged Static+Dynamic Partial Analysis for Java-like languages" at SERI 2023.**
- **Presented "Principles of Staged Static+Dynamic Partial Analysis at SAS 2022".**