

ADWAIT GODBOLE

firstname@berkeley.edu  GitHub

Research Interests: Formal Methods, Hardware/Software Verification, Security, Concurrency

EDUCATION

University of California, Berkeley , Berkeley, USA Ph.D in Computer Science (<i>advised by Prof. Sanjit A. Seshia</i>)	2020 - current GPA: 3.94/4
Indian Institute of Technology Bombay , Mumbai, India Bachelor of Technology in Computer Science and Engineering with Honors	2016 - 2020 GPA: 9.67/10

EXPERIENCE

Intel Labs , Hillsboro, Oregon Formal Verification Internship (<i>supervised by Jin Yang</i>)	May - Aug 2022
Algorithms Profit Trust , Delhi, India Quantitative Trading Researcher	May - Aug 2020
Uppsala University , Uppsala, Sweden Research Internship (<i>with Parosh A. Abdulla</i>)	May - Aug 2019
INRIA , Rennes, France Research Internship (<i>with Blaise Genest</i>)	May - Aug 2018

PEER-REVIEWED PUBLICATIONS

- **Adwait Godbole**, Kevin Cheang, Yatin A. Manerkar, Sanjit A. Seshia. Lifting Micro-Update Models from RTL for Formal Security Analysis. (*to appear*) 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2024.
- Chase Norman, **Adwait Godbole** and Yatin A. Manerkar. PipeSynth: Automated Synthesis of Microarchitectural Axioms for Memory Consistency. 28th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2023.
- Jeremy Casas, Zhenkun Yang, Wen Wang, **Adwait Godbole**, Jin Yang. Towards A Formally Verified Fully Homomorphic Encryption Compute Engine. 60th ACM/IEEE Design Automation Conference (DAC), 2023.
- **Adwait Godbole**, Leiqi Ye, Yatin A. Manerkar, Sanjit A. Seshia. Modelling and Verifying Security Oriented Resource Partitioning Schemes. (*to appear*) 23rd Conference on Formal Methods in Computer-Aided Design (FMCAD), 2023.
- Parosh Aziz Abdulla, Mohamed Faouzi Atig, **Adwait Godbole**, Shankaranarayanan Krishna, Mihir Vahanwala. Overcoming Memory Weakness with Unified Fairness - Systematic Verification of Liveness in Weak Memory Models. 35th International Conference on Computer Aided Verification (CAV), 2023.
- Parosh Aziz Abdulla, Mohamed Faouzi Atig, Florian Furbach, **Adwait Godbole**, Yacoub G. Hendi, Shankara Narayanan Krishna, Stephan Spengler. Parameterized Verification under TSO with Data Types. 29th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 2023.
- **Adwait Godbole**, Yatin A. Manerkar and Sanjit A. Seshia. Automated Conversion of Axiomatic to Operational Models: Theory and Practice. The 22nd Conference on Formal Methods in Computer-Aided Design (FMCAD), 2022.

- Elizabeth Polgreen, Kevin Cheang, Pranav Gaddamadugu, **Adwait Godbole**, Kevin Laeuffer, Shaokai Lin, Yatin A. Manerkar, Federico Mora and Sanjit A. Seshia. UCLID5: Multi-Modal Formal Modeling, Verification, and Synthesis. The 34th International Conference on Computer Aided Verification (CAV), August 2022.
- **Adwait Godbole**, Krishna S., Roland Meyer and Soham Sundar Chakraborty. Parameterized Verification under Release Acquire is PSPACE-complete. Proceedings of the 2022 ACM Symposium on Principles of Distributed Computing (PODC), 2022.
- Abdulla, Parosh Aziz, Mohamed Faouzi Atig, Raj Aryan Agarwal, **Adwait Godbole** and S. Krishna. Probabilistic Total Store Ordering. 31st European Symposium on Programming (ESOP), 2022.
- Abdulla, Parosh Aziz, Mohamed Faouzi Atig, **Adwait Godbole**, S. Krishna and Viktor Vafeiadis. The Decidability of Verification under PS 2.0. 30th European Symposium on Programming (ESOP), 2021.
- Figueira, Diego, **Adwait Godbole**, Shankara Narayanan Krishna, Wim Martens, Matthias Niewerth and Tina Trautner. Containment of Simple Conjunctive Regular Path Queries. International Conference on Principles of Knowledge Representation and Reasoning (KR), 2020.
- Nathalie Bertrand, Miheer Dewaskar, Blaise Genest, Hugo Gimbert, **Adwait Godbole**. Controlling a Population. LMCS Volume 15, Issue 3, 2019.

SCHOLASTIC ACHIEVEMENTS

- Awarded the IEEE PES IPISA Scholarship (2016)
- Indian National Math Olympiad Awardee (2015)
- Recipient of the KVPY Scholarship (2015, 2016)
- Recipient of the NTSE (National Talent Search Examination) Scholarship (2012)

TALKS

- Formal Verification and Synthesis for Memory Consistency (Systems Group, ETH Zurich)
- Formal Verification and Synthesis at the HW/SW Interface (**SLICE** Retreat 2023)
- Parameterized Verification under Release Acquire (**YR-OWLS**)

RELEVANT COURSES

At UC Berkeley

Computer Systems Security (CS261, Fall 2023), Synthesis, Debugging and Compilation (CS 294, Fall 2022), Graduate Computer Architecture (CS 252A, Spring 2021), Formal Methods (CS 219C, Spring 2021), Design and Analysis of Programming Languages (CS 263, Fall 2021)

At IIT Bombay

Core - Data Structures and Algorithms³, Computer Architecture³, Digital Logic Design³, Automata Theory, Operating Systems³, Database Systems³, Computer Networks³, Compilers³

Electives - Automated Reasoning, Formal Specification and Verification of Programs, Concurrent and Asynchronous Systems, Special Topics in Automata Theory

TECHNICAL SKILLS

- **Languages:** I've worked on projects written in Python, C/C++, Scala, Java, Verilog
- **Tools/Frameworks:** SAT/SMT (e.g., z3, CVC5), Model checkers (e.g., UCLID5, CBMC, Dafny), Hardware design/verification (Verilator, Yosys, Chisel), Software analysis (e.g., LLVM)

³Had a laboratory component

TEACHING

CS 172 - **Computability and Complexity**
CS 310 - **Automata Theory**
CS 218 - **Design and Analysis of Algorithms**
PH 107 - **Quantum Physics and Applications**

Jan 2022 - May 2022 | UC Berkeley
Jan 2020 - April 2020 | IIT Bombay
Jan 2019 - April 2019 | IIT Bombay
July 2017 - Nov 2017 | IIT Bombay

REFERENCES

Sanjit A. Seshia (Ph.D. Advisor)
Professor, EECS, UC Berkeley
[webpage](#)

Krishna S.
Professor, CSE, IIT Bombay
[webpage](#)

Yatin A. Manerkar
Assistant Professor, University of Michigan
[webpage](#)

Parosh Abdulla
Professor, Uppsala University
[webpage](#)