Nikhil Pimpalkhare

nikhil.pimpalkhare@princeton.edu | github.com/nikhilpim | nikhilpim.github.io

Education

Princeton University

Doctor of Philosophy in Computer Science — *August 2023 - exp. 2026*

Masters of Science in Engineering, Computer Science, GPA: 4.0 — *August 2021 – May 2023*

- Advisor: Professor Zachary Kincaid
- Research Area: Theory of Programming Languages, with an emphasis on static program analysis
- Domain Knowledge: Abstract Interpretation, Numerical Abstract Domains, Invariant Generation, Linear Algebra
- Courses: Automated Reasoning, Programming Languages, Modal Logic, Info Theory, Theoretical ML, Rand. Algos

University of California, Berkeley

Bachelor of Science in Electrical Engineering and Computer Science, GPA: 3.99 — *August 2017 – May 2021*

- Research Area: SMT Solver Optimization
- Courses: Formal Methods, ML, Probability, OS, Signal Processing, Convex Optimization, Computability/ Logics

Publications

1. **N. Pimpalkhare**, Z. Kincaid, 2023.
   Procedure Summarization via Vector Addition Systems and Inductive Potentials
   In Submission.

2. **N. Pimpalkhare**, F. Mora, E. Polgreen, and S. Seshia, 2021.
   MedleySolver: Online SMT Algorithm Selection
   In 24th International Conference on Theory and Applications of Satisfiability Testing.

3. **N. Pimpalkhare**, 2020.
   Dynamic Algorithm Selection for SMT
   In 35th IEEE/ACM International Conference on Automated Software Engineering (Student Research Competition).

Teaching and Work Experience

Graduate Student Instructor — Princeton University

COS445: Economics and Computation — *Spring 2023, Spring 2022*

COS326: Functional Programming — *Fall 2022*

COS240: Reasoning About Computation — *Fall 2021*

Undergraduate Student Instructor — University of California, Berkeley

CS61C: Great Ideas in Computer Architecture — *Fall 2019, Spring 2020, Fall 2020, Spring 2021*

CS70: Discrete Mathematics and Probability — *Summer 2020*

Intuit Summer Intern — Mountain View, CA

GoPayment Android and Server Team — *Summer 2018, 2019*

- Engineered service for tracking shipping information of card readers (2019)
- Designed and implemented a conversational help chatbot for Android (2018)

Skills

Languages: **OCaml**, **Python**, C, Java, Javascript, Bash
Program Analysis Tools and Benchmarks: **Z3**, **SMT-LIB**, **SV-Comp**, Dafny, Coq, SAT
Other Tools: TensorFlow, PyTorch, Scikit-Learn, NumPy, Matplotlib
Nonacademic: Chess, Long Distance Running, Skiing, French (still learning!)