PRADYUMNA SHOME

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Education

Georgia Institute of Technology — Atlanta, GA
Doctor of Philosophy – PhD, Computer Science — *August 2022 – May 2027*

University of Illinois at Urbana-Champaign — Champaign-Urbana, IL
Bachelor of Science – BS, Computer Science — *August 2017 – May 2021*

Achievements: Malwarebytes Cybersecurity Scholarship ● 3 × IL Engineering Achievement Scholarship ● Kleiner Perkins Engineering Fellowship Finalist ● James Scholar ● Forbes Under 30 Scholar ● CS Outstanding Course Assistant Award

Security and Privacy Experience

Georgia Institute of Technology — Atlanta, GA
Researcher — *August 2022 – Presentt*

- Empirical research in microarchitectural side-channel attacks; Paper: SoK: Rowhammer in the Post-TRR Era
- Developing attack programs in C, C++, and Rust to trigger fast paths in a processor that leak secret information
- Analyzed impact of cyberwarfare (APTs, ransomware, wipers, cyber-physical disruption) in Russia-Ukraine conflict

Security and Privacy Research at Illinois — Urbana, IL
Researcher — *August 2019 – May 2021*

- Surveyed CompArch literature in detail, implemented processor optimizations via gem5, and conceptualized attacks
- Published top-tier conference paper on microarchitectural side-channel attacks in modern processors at ISCA 2021
- Paper: *Opening Pandora's Box: A Systematic Study of New Ways Microarchitecture Can Leak Private Data*
- Used information flow tracking and program analysis to automate identification of side-channel vulnerabilities

Software Engineering Experience

Meta (formerly Facebook) — San Francisco Bay Area, CA
Software Engineer · Messenger Growth — *September 2021 – August 2022*

- Created features that help friends start meaningful 1:1 conversations based on content they mutually enjoy, using Hack

Software Engineering Intern · Privacy Control Infrastructure, Privacy and Data Use Org — *September 2020 – December 2020*

- Developed framework that supports 2 billion daily mutations to profile-level privacy settings
- Framework simplifies legal compliance, improves developer experience, and reduces the impact of SEVs

Salesforce — San Francisco, CA
Software Engineering Intern · Records Experience, Platform Cloud — *June 2019 – August 2019*

- Created recommendation system for automatic test case suggestions; reduced 13 work days per sprint planning session
- Ideated and built intern-matching social app that helps bolster personal connections and surfaces common interests

Virtusa — New York, NY
Software Engineering Intern · Media & Content Division — *July 2018 – August 2018*

- Created serverless cloud app for semantic and fine-grained video search through time series analysis on video frames
- Build pipelines using AWS to automate data wrangling for 8+ entity schemas and multiple GBs of data

HackIllinois — Urbana, IL
Software Engineer · Systems Staff — *April 2018 – February 2019*

- Developed Go microservices for user and event management, authorization, and cloud notifications for 2.5K+ users
- Implemented user mocking, OAuth single sign-on, decision review, and templated mail to improve hacker experience

Technical Skills

- **Programming Languages**: Python, Go, Java, C, C++, Kotlin, HTML, CSS, JavaScript, Haskell

- **Tools + Frameworks**: Cloud (AWS, Firebase, CI/CD, Serverless, Docker); Databases (SQL/NoSQL); Web (React, Node.js, Web Components); Version Control (Git, SVN); ML (PyTorch, Scikit-learn, NumPy); Misc. (Intel VTune)

Last updated: January 28, 2022.