

# CHAITANYA RAHALKAR

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## EDUCATION

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### Georgia Institute of Technology

MS Cybersecurity *GPA: 4.0/4.0*

Atlanta, GA

January 2021 - December 2022

- Relevant Courses: CS 8803 - Blockchain and Cryptocurrencies, CS 6262 - Network Security, CS 6238 - Secure Computer Systems, CS 6265 - Binary Exploitation Lab, CS 6210 - Advanced Operating Systems, CS 6260 Applied Cryptography
- Graduate Teaching Assistant for CS 6238 Secure Computer Systems and CS 6260 Applied Cryptography

### Savitribai Phule Pune University

BE Computer Engineering *GPA: 9.6/10*

Pune, India

August 2016 - May 2020

- Research Assistant
  1. Worked on the study of side-channel attacks that target the virtualization level of an Operating System.
  2. Assisted in creating a meta classifier-based ensemble learning model for attack detection.
  3. Researched various techniques used by attackers to exploit private information from the set of target virtual machines running on cloud platforms.

## SKILLS

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Programming Languages:	C++, C, Golang, Javascript, Rust, Python, Assembly, Bash
System Administration:	AWS Cloud Services, Linux/UNIX System Administration, Cloud Deployment
Security Engineering Tools:	IDA Pro, Pwntools, LLVM LibFuzzer, AFL, Burp Suite, Ghidra, Metasploit
Web Frameworks:	Django, ExpressJS, Flask, FastAPI

## EXPERIENCE

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### Meta (formerly Facebook)

*Security Engineering Intern*

Seattle, WA

May 2022 - August 2022

- Designed and developed coverage-guided fuzzing harnesses with LLVM Libfuzzer that run on Meta's Continuous Fuzzing platform - Lionhead.
- Found 10+ security bugs in Meta's production code and tooling systems through fuzzing and code reviews / auditing.
- Audited and statically analyzed code in the WhatsApp Payment Engine system for security and privacy issues. Found 5+ CVE-worthy security bugs.
- Worked on developing an automated fuzzing harness generation system to get coverage guided fuzzing for 100,000+ API endpoints.
- Designed a fuzzing metrics system and visualization dashboard for coverage and fuzzing performance insights.

### BosLeo LLC

*Security Engineer*

Pune, India

July 2020 - July 2021

- Worked on the development of Anti-Virus, Anti-Phishing, Software Sandboxing, Application Firewall etc. components as a part of the company's Endpoint Protection Platform (EPP).
- Worked on the design, development and deployment of a network-based intrusion detection system (NIDS) supplemented with an intrusion analytics and insights system. Simulated, detected and analyzed 100+ network intrusion attacks with the NIDS.
- Developed a Software-Defined Perimeter prototype based on the Zero Trust Network architecture.

### Rhythmflows Solutions

*Software Engineering Intern*

Pune, India

January 2020 - June 2020

- Worked on scalable architectural design and development of a video on-demand solution streaming and web API, used by more than 500,000 users.

- Audited the backend & the Cordova codebase (iOS + Android native app development framework) for security issues and vulnerabilities. Found 20+ CVE-worthy security and privacy issues.

### Quick Heal Technologies

Pune, India

*Security Engineering Intern*

June 2019 - November 2019

- Developed a secure central authentication service (CAS) to support single sign on (SSO) for the company's internal applications with added support for LDAP / Active Directory integration.
- Designed client integration libraries for Python and Golang-based web application frameworks to support and integrate 100+ internal applications.

### Centre for Police Research (Government of Maharashtra, India)

Pune, India

*Research Intern*

January 2020 - April 2020

- Worked with the Pune Police Department to design and develop a PoC (proof-of-concept) for an automated WiFi Security Analyzer for ethical war drives conducted by the police department.

## PROJECTS

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### Frost Linux (Maintainer & Developer) *Bash, Python*

Frost Linux is a security-oriented Linux distribution based on Arch Linux. It is a set of Shell scripts to make Arch Linux more security and privacy-centric. The distribution is designed for casual, security-minded Linux enthusiasts.

### SPV - Stateless Password Vault *NodeJS, Electron*

It is a stateless, secure and highly reliable master-password-based password manager that ensures that the data doesn't leave your device.

### WebTTY *Python*

A utility to share services running on localhost, mirror terminals, eliminating the hassle of setting up network port forwarding, DNS and static IP addresses.

### Cyberfort CTF Platform *Python (Django), Angular JS*

An online platform to test and advance skills in Penetration Testing and Cybersecurity.

## PUBLICATIONS

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**SoK: Content Moderation Schemes in End-to-End Encrypted Systems** *arXiv preprint arXiv:2208.11147*

**Analyzing Trends in Tor** *arXiv preprint arXiv:2208.11149*

**Summarizing and Analyzing the Privacy-Preserving Techniques in Bitcoin and other Cryptocurrencies** *arXiv preprint arXiv:2109.07634, 2021*

**End-to-End Lung Cancer Diagnosis on Computed Tomography Scans using 3D CNN and Explainable AI** *International Journal of Computer Applications, 2020*

**Content Addressed Peer-to-Peer File System for the Web with Blockchain-based Metadata Integrity** *IEEE International Conference on Advances in Computing, Communication and Control, 2019*

**Using Generative Adversarial Networks for Secure Pseudorandom Number Generation** *ACM Conference on Computer and Communications Security (CCS), 2019*

**A Secure Password Manager** *International Journal of Computer Applications, 2019*

## LEADERSHIP

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**IEEE Student Branch at Pune Institute of Computer Technology** - Programming Head

**IEEE Student Branch at Pune Institute of Computer Technology** - Co-founder, Creator & Head of Lakshya CTF

## AWARDS AND RECOGNITION

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**Finalist, ACM (Association for Computing Machinery) - Pune Chapter Hackathon (2019)**

**Winner, ACM (Association for Computing Machinery) - Pune Chapter Hackathon (2018)**

**Runner Up, Vishwa CTF Cybersecurity Competition (2018)**

**Winner, MIT Tesla's Googler (Technology Quizzing Event) (2017)**

**Finalist, MindSpark's Googler (Technology Quizzing Event) (2017)**

**Finalist, National Coding Competition (2017)**