

ANUSHKA VIRGAONKAR

Atlanta, GA · avirgaonkar3@gatech.edu · (470)652-3734 · anushkavirgaonkar.dev

EDUCATION

Georgia Institute of Technology
MS Cybersecurity *GPA: 3.9/4.0*

Atlanta, GA
January 2021 - December 2022

- Relevant Courses: CS 6747 - Advanced Malware Analysis, CS 6265 - Binary Exploitation Lab, CS 6238 - Secure Computer Systems, CS 6210 - Advanced Operating Systems, CS 8803 - Blockchain and Cryptocurrencies, CS 6262 - Network Security, CS 6260 Applied Cryptography
- Graduate Teaching Assistant for CS 6238 Secure Computer Systems
- Assisting Dr. Mustaque Ahamad with a research project on Evasive Malware Techniques.

Savitribai Phule Pune University
BE Computer Engineering *GPA: 8.99/10*

Pune, India
August 2016 - May 2020

SKILLS

Programming Languages:	C, C++, Python, x86 Assembly, Java, Javascript, Golang, Bash, PHP
Security Engineering:	IDA Pro, Ghidra, Pwntools, x64dbg, dnSpy, Metasploit, Wireshark, OWASP Top 10
System Administration:	Linux/UNIX System Administration, Network Management, Cloud Deployment
Web Frameworks:	Django, Flask, FastAPI, AngularJS, NodeJS

EXPERIENCE

Mandiant (Google)
Reverse Engineering and Malware Analysis Intern

Atlanta, GA
May 2022 - August 2022

- Analysed malware samples and submitted detailed analysis reports
- Contributed to the FLARE team's open-source static analysis tool **capa** by writing 50+ rules for automatically detecting capabilities in .NET malware samples and adding support for property feature extraction
- Wrote a plugin for automated malware configuration extraction for a Remote Access Trojan (RAT) family
- Developed scripts in x64dbgpy to streamline the malware analysis workflow by automating dynamic analysis and presented the tool to the leadership team

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) inspired by Suricata IDS, 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.

Quick Heal Technologies
Security Engineering Intern

Pune, India
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 internal applications.

Persistent Systems
Software Engineering Intern

Pune, India
June 2019 - November 2019

- Worked on End-to-End Lung Cancer Screening with Chest Computed Tomography Scans using Convolutional Neural Networks.
- Worked on creating a unified interface for radiologists & researchers to analyze CT scans.
- Supplemented the unified application using XAI (Explainable AI) to simplify the analysis of the scans.

- 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

A Relay-based Secure Device-to-Device File Transfer Mechanism using SPAKE2 protocol

Designed an end-to-end encrypted file transfer approach which makes use of a relay server to establish full duplex communication (using WebSockets) and eliminates the need for the file to be uploaded to a third-party server.

SmartLabs: A Lab Management Toolkit for Monitoring Systems

Designed and developed a system that offers real-time system data and network metrics, live visualizations and report generation capabilities for computer nodes in a network.

Lakshya Weekly CTF Website

An online platform for students to practice CTF challenges, developed using the Django framework for Python and hosted on Heroku.

PUBLICATIONS

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*

ACHIEVEMENTS

Winner, Vishwa CTF Cybersecurity Competition 2019

Runner Up, Vishwa CTF Cybersecurity Competition 2018

Participant, NSA Codebreaker Challenge 2021

PROGRAM COMMITTEES & ORGANIZATIONS

Impetus & Concepts - Co-founder of Lakshya CTF (Capture the Flag)

Pictoreal - Member of the Editorial Board of the Annual College Magazine: Pictoreal

EXTRACURRICULAR ACTIVITY

Niwant Andh Mukta Vikasalay - NGO - Served as a scribe assisting visually impaired students in giving aptitude exams

Pictosocial - Assisted in organizing a Blood donation camp at Pune Institute of Computer Technology