

# PRANJALI VINOD THAKUR

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## EDUCATION

### Master of Science, Cybersecurity

Aug 2022 - Dec 2024 (Expected)

*Rochester Institute of Technology, Rochester, New York, USA*

*GPA: 3.86/4.00*

**Relevant Coursework:** Network Security, Enterprise Security, Computer Viruses & Malware Software, Web Server Applications & Security Audits, Computer System Security, Trusted Computing, Internet Security, Network & Distributed System Security, Cryptography & Authentication, Introduction to Computing Security, Software Development

### Bachelor of Engineering, Electronics Engineering

Aug 2016 - Oct 2020

*Mumbai University, Navi Mumbai, Maharashtra, India*

## WORK EXPERIENCE

### Security Engineer Intern | Circle Internet Financial, Boston, Massachusetts

May 2024 - Present

- Implemented GitHub integration with Olympix.ai for code scanning and automated unit testing using **GitHub Advanced Security** and **GitHub Actions**, integrated these security alerts to **Jira**, streamlining the development workflow and ensuring code quality.
- Investigated threat intelligence tools and solutions for blockchain-based vulnerabilities, identifying risks associated with stablecoins on various blockchains, contributing to the security and stability of digital financial assets.
- Conducted a comprehensive inventory of cryptographic assets and developed a **Cryptographic Bill of Materials (CBOM)**.

### Graduate Teaching Assistant | Rochester Institute Of Technology, Rochester, NY

Sep 2023 - May 2024

- Facilitated learning in "Introduction to Cybersecurity Risk Management for Information Security" by providing expert assistance during lectures, enhancing student comprehension and engagement.
- Mentored 30+ students in **data security** and risk management concepts through interactive case studies, leading to a noticeable improvement in practical application skills and understanding of **risk assessments**.

### Software Developer | NeoSoft Technologies, Mumbai, India

Dec 2020 - May 2022

- Architected blockchain based solutions for fractional ownership tokenization in real estate, leveraging the principles of **DeFi** using ERC20 tokens, within an **Agile framework**.
- Built a decentralized application on the Ethereum blockchain that facilitated the auction of **NFT** art using ReactJs.
- Engineered a clone of a prominent **decentralized exchange (DEX)** as part of a **Web3** initiative, leveraging the innovative principles of DeFi to enable direct, intermediary-free trading.

## PROJECTS

### Security Operations Center(SOC) Automation Lab

Wazuh | TheHive | Shuffle

- Orchestrated a comprehensive SOC automation lab project, integrating **SIEM** (Wazuh) and **SOAR** (Shuffle) technologies to monitor and respond to security events such as Mimikatz detection.
- Configured Wazuh agent to detect and alert security events, ensuring the capture of critical telemetry with Sysmon integration.
- Streamlined incident management with **TheHive** integration, automating alert distribution to SOC analysts.

### Secure Web Application Server

Python | PHP | SQL | Docker | Ansible

- Developed a secure web application server specifically for PHP script execution, using Docker for deployment.
- Implemented web request parsing focusing on security measures to mitigate vulnerabilities like **SQLi** & **path traversal**.
- Enhanced server security and efficiency, ensuring robust protection against common web vulnerabilities.

### Strategic Cybersecurity Simulation: Attack and Defense Operations

VMware | AD | Metasploit

- Engaged in a comprehensive cybersecurity exercise, simulating attack and defense scenarios in a controlled virtual environment.
- Leveraged **VMware ESXi** and a range of security tools to establish a realistic cybersecurity simulation environment, identifying and exploiting **11** distinct vulnerabilities across 7 group infrastructures.
- Elevated understanding of cybersecurity attack and defense mechanisms, enhancing practical skills in network and system security.

### Authentication of IoT devices using Zero-Knowledge Proof

ZKP

- Innovated an authentication protocol for IoT devices using Zero-Knowledge Proofs to enhance security.
- Employed **cryptographic techniques** and Multi-Graph ZKP to eliminate impersonation risks and improve authentication speed.
- Achieved a more secure and efficient authentication process with **70%** reduced overhead for IoT devices.

## SKILLS

**Network Security:** Firewalls, IDS/IPS, VPNs

**Programming Languages:** Python, PowerShell, Bash, HTML, JavaScript, ReactJs, Solidity, SQL, Assembly Language (x86, x64)

**Networking Protocols:** TCP/IP, DNS, DHCP, SNMP, OSPF, STP

**Operating Systems:** Windows, Linux, macOS, Kali

**Tools:** Git, GitHub, BitBucket, JIRA, Elasticsearch, Postman, Wireshark, Snort, Resource Hacker, Strings, PEview, UPX, Regshot, ProcessMonitor, Cisco Packet Tracer, Metasploit, Arduino, MATLAB, Ansible, Docker, Intel SGX

**Advanced Security and Privacy Concepts:** K-anonymity, Local Differential Privacy, Federated Learning, Homomorphic encryption, Zero Knowledge Proof, Malware Analysis, SIEM