Chaitanya Rahalkar

Personal Website: rahalkar.dev
GitHub: github.com/chaitanyarahalkar
Email : chaitanyarahalkar4@gmail.com
Mobile : (470)604-0444

EDUCATION

- **Georgia Institute of Technology** — Atlanta, GA
  Master of Science in Cybersecurity — GPA - 4/4 — January 2021 – December 2022

- **Savitribai Phule Pune University** — Pune, India
  Bachelor of Engineering in Computer Engineering — GPA - 9.6/10 — July 2016 – June 2020

TECHNICAL SKILLS

- Programming Languages - C, C++, Rust, Python, Javascript, Golang

- Web Frameworks - Django, Flask, NodeJS, ExpressJS, FastAPI

- System Administration - AWS Cloud Services, Linux/UNIX System Administration, Network Management, Cloud Deployment, Docker, Kubernetes

- Security Engineering Tools - Ghidra (Reverse Engineering), Pwntools, Metasploit, Burp Suite, IDA Pro, AFL, LLVM LibFuzzer, S2E (Symbolic Execution Framework), Frida, Corellium, Splunk, MobSF

- Cybersecurity - HIPPA, NIST CSF, PASTA, STRIDE and DREAD threat modelling methodologies

- Certifications - AWS SAA - Certified Cloud Practitioner, OSCP (In progress)

EXPERIENCE

PROFESSIONAL EXPERIENCE

- **Block Inc. (f.k.a. Square Inc.)** — Remote, US
  Software Security Engineer — May 2023 - Present
  - Lead the development of enterprise-scale cloud-native security pipelines and detection systems, driving operational excellence through performance optimization and robust monitoring solutions.
  - Spearhead cross-functional collaboration with stakeholders to architect and implement innovative security solutions, while maintaining 24/7 platform support through rotational on-call responsibilities.
  - Champion continuous improvement through code reviews, process refinements, and architectural recommendations, resulting in enhanced system scalability and cost optimization.

- **Praetorian Security** — Remote, US
  Security Engineer III — January 2023 - May 2023
  - Conducted over 100 comprehensive security audits, compliance assessments, vulnerability assessments, and penetration tests for Praetorian's diverse client base.
  - Spearheaded the creation and refinement of 50+ threat models, penetration test reports, and finding reports; effectively communicated complex security discoveries to relevant stakeholders, leading to enhanced security protocols.
  - Assessed the security integrity of web applications, mobile applications, and television apps, identifying and rectifying over 200 flaws and vulnerabilities for esteemed clients such as Nordstrom, Block, Affirm, Salesforce, Fox News, Amazon and more.
  - Provided valuable mentorship and guidance to 10+ junior engineers, fostering their professional growth and contributing to the development of a skilled and cohesive engineering team that delivered projects 20% faster on average.
  - Worked on the development of security and backend engineering modules in Chariot (Praetorian's vulnerability management and assessment platform) and Nosey Parker (Praetorian's source-code secrets scanning tool)

- **Meta (previously Facebook)**   1 Hacker Way, Menlo Park, CA 94025
  Security Engineering Intern   *May 2022 - August 2022*
    - Designed and developed coverage-guided fuzzing harnesses using LLVM Libfuzzer for Meta's Continuous Fuzzing platform, Lionhead. Identified and reported over 10 security vulnerabilities in Meta's production code and tooling systems through fuzzing, code reviews, and audits.
    - Conducted security audits and static code analysis within the WhatsApp Payment Engine, identifying and documenting 5+ CVE-worthy security issues with a focus on security and privacy.
    - Assisted in the development of an automated fuzzing harness generation system, enhancing the scope of coverage-guided fuzzing across 100,000+ API endpoints, and demonstrating scalability and efficiency in security testing.
    - Conceptualized and designed a comprehensive fuzzing metrics system and associated visualization dashboard to provide insights on coverage and fuzzing performance, aiding in strategic decision-making and process optimization.

- **BosLeo LLC**   Pan Card Club Road, Pune, India 411045
  Security Engineer bosleo.com   *July 2020 - July 2021*
    - Worked on the development of Anti-Virus, Anti-Phishing, Software Sandboxing, Application Firewall components as a part of the company's Endpoint Protection Platform (EPP).
    - Architected and implemented a cutting-edge network-based intrusion detection system (NIDS) fortified with an intrusion analytics and insights system. Orchestrated the simulation, detection, and analysis of 100+ network intrusion attacks and enabling proactive threat detection.
    - Modelled a Software-Defined Perimeter prototype based on the Zero Trust Network architecture.

ACADEMIC WORK

1. Rahalkar, Chaitanya, and Anushka Virgaonkar. "Analyzing Trends in Tor" arXiv preprint arXiv:2208.11149 (2024). (Link)

2. Rahalkar, Chaitanya, Virgaonkar Anushka and Kethaki Varadhan. "SoK: Content Moderation Schemes in End-to-End Encrypted Systems" arXiv preprint arXiv:2208.11147 (2022). (Link)

3. Rahalkar, Chaitanya, and Anushka Virgaonkar."Summarizing and Analyzing the Privacy-Preserving Techniques in Bitcoin and other Cryptocurrencies." arXiv preprint arXiv:2109.07634 (2021). (Link)

4. Rahalkar, Chaitanya & Virgaonkar, Anushka & Gujar, Dhaval & Patkar, Sumedh. (2020). End-to-End Lung Cancer Diagnosis on Computed Tomography Scans using 3D CNN and Explainable AI. International Journal of Computer Applications. 176. 1-6. 10.5120/ijca2020920111. (Link)

5. Rahalkar, Chaitanya, and Dhaval Gujar. "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. IEEE, 2019 (Link)

6. Oak, Rajvardhan, Chaitanya Rahalkar, and Dhaval Gujar. "Poster: Using Generative Adversarial Networks for Secure Pseudorandom Number Generation." Proceedings of the 2019 ACM SIGSAC Conference on Computer and Communications Security. ACM, 2019 (Link)

7. Rahalkar, Chaitanya, and Dhaval Gujar."A Secure Password Manager." International Journal of Computer Applications 975: 8887. (Link)