Mehtab Zafar

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Education

2023 – 2025   **Master of Computing**, *Infocomm security*, National University of Singapore
Thesis: *Automated Test Case Reduction in Query-Specific Language(s)*

2017 – 2021   **B.Tech**, *Computer Engineering*, Inderprastha Engineering College, India

Work

Aug'2024 – Present   **Research Assistant**, *NUS TSS group*, National University of Singapore
- Researched scheduling algorithms for exploring thread interleavings and developed tools for race detection from execution traces
- Built experimental frameworks for evaluating fuzzing techniques across software testing benchmarks
- Designed and evaluated agentic approaches for automating complex reasoning tasks within software testing frameworks

Jan'2024 - Dec'2024   **Teaching Assistant**, *National University of Singapore*
- Conducted weekly tutorial classes and assisted with exam sessions and grading assignments for CS2107 (Introduction to Information Security)

July'2021 - Aug'2023   **Product Security Engineer**, *Red Queen Dynamics*, Washington, D.C.
- Worked as a full-stack developer to develop a security training product from scratch (using Django/PostgreSQL)
- Created a CI/CD pipeline for automated deployments.
- Managed DevOps for the team; maintained cloud infrastructure (AWS) to support internal applications.
- Performed ad-hoc penetration tests for various clients.

Aug'2020 - Aug'2023   **Bug Bounty Hunter**, *HackerOne/BugCrowd/Intigriti*, Remote
- Listed on the Hall-of-Fame of: Google, GitHub, PayPal, US DoD, DELL, and Atlassian.
- Performed static and dynamic code analysis of Android and Web applications.

Aug'2019 - Mar'2020   **Developer**, *Vulnhub/TryHackMe*, Remote
- Developed Capture The Flag (CTF) challenges for TryHackme.com focused on web vulnerabilities like XXE, XSS, and JWT.
- Created vulnerable machines for VulnHub.com with custom applications in Python and Bash.

Open Source Internships

May – Aug 2023   **Student Developer**, *Google Summer of Code - The Honeynet Project*
- Enhanced a high-interaction honeypot (Snare/Tanner) with improved speed, persistent storage, and API functionality.

May – Aug 2018   **Student Developer**, *Google Summer of Code - XBMC Foundation*
- Developed a Python tool for static code analysis of Kodi (media player for smart TVs) addons.

Academic Services

Aug – Sept 2024   **Artifact Evaluation Committee member**, *SOSP'24, SOSP'25*
- Reviewed and evaluated submitted research artifacts for reproducibility as part of the SOSP Artifact Evaluation Committee.

Certifications

2021   **OSCP**,   Offensive Security Certified Professional