

RAHUL MITRA

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EDUCATION

National University of Singapore

Bachelor of Engineering, Industrial Systems Engineering

Singapore

Aug 2023 – Jul 2027

- Pursuing a Second Major in Computer Science and a Minor in Mathematics.
- Awarded Certificate of Outstanding Performance in 3D Computer Vision (CS4277): top student in a class of 24, NUS School of Computing.

EXPERIENCE

STMicroelectronics

Operations Research (NUS System Design Project), Contract

Singapore

Aug 2026 – Present

- Build an AI-driven put-away recommendation system for STMicroelectronics' Singapore warehouse, combining picking history, demand forecasts, and live capacity to replace experience-based slotting decisions.

Amazon

Robotics Vision Engineer (Blended AI+X)

Singapore

Jul 2026 – Present

- Build vision systems for camera ISP enhancement, super-resolution, and image restoration under motion and low light.

Abbott Laboratories

Operational AI Systems & Data Engineer (Contract)

Singapore

Jun 2026 – Present

- Design a hallucination-resistant tool loop in which the model emits schema-constrained JSON and the solver computes every number, gated by an automated numeric-fidelity check and a per-call audit log, with no write path to plant control.

Abbott Laboratories

Data Analytics and Project/Product Management Intern

Singapore

Jan 2026 – Jun 2026

- Developed a SimPy discrete-event digital twin and OR-Tools CP-SAT optimizer for hybrid flow-shop scheduling, translating production objectives and constraints into decision-ready schedules.
- Validated a non-destructive, 15-stage changeover-data pipeline against five years of unseen raw data with zero execution failures, normalizing operator- and machine-generated anomalies.
- Productionized a team-built APC simulator for live internal users on Azure App Service, applying access restrictions, runtime and session hardening, and Docker packaging.

YesWeHack

Independent Bug Bounty Researcher

Remote

May 2024 – Present

- Assessed GovTech GBBP12/13, the Land Transport Authority, and 13+ other programs for SSRF, CSRF, SQL/NoSQL injection, authentication bypass, and authorization weaknesses.
- Automated endpoint discovery, payload delivery, and evidence collection for responsible-disclosure reports using Burp Suite, Wireshark, Python, Bash, and custom fuzzing scripts.

Republic of Singapore Navy

Base Support Assistant

Singapore

Jan 2022 – Jan 2023

- Compressed a six-month food-waste analysis cycle into a sub-three-minute reporting process with an Excel VBA automation workflow inside a security-constrained environment.

PROJECTS

Arcane Security Tooling Family

Mar 2026

- Built Rust-forward security and red-team tooling (Arcane, Arcane-PP, Arcane-GLM, Arcane-OCR) for automation, OCR, and adversarial workflows.

Volt Pulse SG: SMU Hack For Cities 2026 (Top 8 Finalist of 50+ teams)

Jan 2026

- Built an agentic AI system for tracking HDB household energy costs using SEALION embeddings, Supabase vector search, RRF routing, and scheduler-agent planning.

DSTA BRINHACK 2025 CTF (top quartile of 400+ teams)

2025

- Solved web, crypto, reverse-engineering, and systems-security challenges under time pressure in a first CTF, finishing in the top quartile among 400+ teams.

LEADERSHIP AND ACTIVITIES

NTUC Health Active Ageing Centre

Elderly Care Volunteer

Singapore

Sep 2025 – Present

- Support weekly senior-engagement activities, deepening empathy for healthcare, accessibility, and human-centered community product design.

SKILLS AND CERTIFICATIONS

Technical: Burp Suite, Wireshark, SSRF, CSRF, SQL/NoSQL injection, authentication bypass, OAuth2/JWT, OWASP Top 10, fuzzing, reverse engineering, custom exploit scripting, Python, Bash, Rust

Certifications: Reverse Engineering Windows Executables (digital forensics); Docker for the Absolute Beginner (Stone River eLearning)