

RAHUL MITRA

+65 8515 5413 | mitrasahul2002@gmail.com | linkedin.com/in/rahulmitra-dev | rahul-mitra.com | github.com/Rah-Rah-Mitra

EDUCATION

National University of Singapore Bachelor of Engineering, Industrial Systems Engineering <ul style="list-style-type: none">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.	Aug 2023 – Jul 2027
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WORK EXPERIENCE

Operations Research (Contract), STMicroelectronics (NUS System Design Project) <ul style="list-style-type: none">Design an AI-driven put-away recommendation system for STMicroelectronics' Singapore warehouse, replacing experience-based slotting with capacity-aware decisions drawn from 3 live inputs: picking history, demand forecasts, and available capacity.	Aug 2026 – Present
Global Operational AI Systems & Data Engineer (Contract), Abbott Laboratories <ul style="list-style-type: none">Assemble a 5-stage offline process-intelligence platform for globally distributed spray-drying plants: GPU OCR and layout parsing, recursive chunking, ONNX embeddings, a Chroma vector store, and LangChain over a locally hosted Gemma model.	Jun 2026 – Present
Robotics Vision Engineer (AI+X Global Challenge), Amazon <ul style="list-style-type: none">Built vision systems turning raw camera feeds into perception-ready frames across 3 workstreams: camera ISP, super-resolution, and image restoration under real-world blur.	Jul 2026 – Oct 2026
Platform & Solutions Engineer (Sparks Citizen Developer), People's Association <ul style="list-style-type: none">Delivered a digital garden-plot balloting platform across admin and public frontends, backend, GIS mapping, and deployment, now production-ready for national rollout across Singapore.Integrated Singpass Login (OIDC) to secure resident sign-in and Myinfo to verify identity and address, keeping garden-plot balloting fair for 150 residents signed up at release.Won a S\$20,000 Sparks Community Innovation Fund award for public good initiatives, then led deployment planning, multi-repo coordination, and stakeholder management across product, engineering, and operations.	Sep 2025 – Sep 2026
Data Analytics & Product Management Intern, Abbott Laboratories <ul style="list-style-type: none">Developed a SimPy discrete-event digital twin and OR-Tools CP-SAT solver for hybrid flow-shop scheduling, then compared 3 approaches (heuristic, MIP, and genetic algorithm) to turn production objectives and constraints into decision-ready schedules.Validated a non-destructive, 15-stage changeover-data pipeline against 5 years of unseen raw data with zero execution failures across operator- and machine-generated anomalies.	Jan 2026 – Jun 2026

PROJECTS

Team Lead & Finalist, Swarmline: SG Defense Tech Hackathon (1,300+ applicants) <ul style="list-style-type: none">Implemented a deterministic Unreal Engine 5.8 C++ simulation with Claude Code; under a ground-link jam, 30 drones confirmed all 8 walking targets in 10 of 10 seeded runs, against 2.1 for an operator-run fleet.	Sep 2026
Finalist, Volt Pulse SG: SMU Hack For Cities (Top 8 Finalist of 50+ teams) <ul style="list-style-type: none">Integrated SEALION embeddings, Supabase vector search, RRF routing, and scheduler-agent planning into an autonomous loop managing electricity and utility savings across multiple HDB households at once, placing top 8 of 50+ teams.	Jan 2026

LEADERSHIP AND ACTIVITIES

YesWeHack, Independent Bug Bounty Researcher <ul style="list-style-type: none">Assessed GovTech GBBP12/13, the Land Transport Authority, and 13+ other programs for SSRF, CSRF, SQL/NoSQL injection, authentication bypass, and access-control weaknesses.	May 2024 – Present
NTUC Health Active Ageing Centre, Elderly Care Volunteer <ul style="list-style-type: none">Coordinate weekly senior-engagement activities, building empathy for healthcare, accessibility, and community-focused product design.	Sep 2025 – Sep 2026

SKILLS AND CERTIFICATIONS

Languages: Python, TypeScript, JavaScript, Java, Rust, C++, SQL, Bash, Excel VBA Web and Cloud: React, Next.js, Three.js, FastAPI, Flask, Docker, AWS (ECS Fargate, RDS, ALB, WAFv2, VPC, ECR, S3, Secrets Manager, KMS, IAM/STS OIDC, Route 53, ACM, CloudWatch, Lambda, API Gateway), Terraform, AWS SAM, Azure App Service, GitHub Actions and Bitbucket CI/CD, Supabase, Singpass Login and Myinfo (OIDC), API design, GIS mapping AI and Machine Learning: RAG, AI agents, vector search, LangChain, PyTorch, ONNX, Chroma, BERT/transformer fine-tuning, model evaluation, deep RL (PPO, A2C, DDPG, DQN), CUDA/HPC on ASPIRE 2A Security: OWASP Top 10, Burp Suite, Wireshark, OAuth2/JWT, SSRF/CSRF/injection testing, fuzzing, secure design Certifications: NVIDIA Disaster Risk Monitoring with Satellite Imagery; Reinforcement Learning and Deep RL Python (Packt)
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