

RAHUL MITRA

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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
Software Engineer (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.	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.Productionized a team-built APC simulator for live internal users on Azure App Service with Docker packaging, access restrictions, and runtime and session hardening.	Jan 2026 – Jun 2026

PROJECTS

Team Lead & Finalist, Swarmline: SG Defense Tech Hackathon (1,300+ applicants) <ul style="list-style-type: none">Directed a 5-person team to architect decentralised drone-swarm coordination on correlated random-walk search, gradient-flow dispersion, delay-tolerant gossip, cross-inhibition consensus, and response-threshold task allocation.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
Personal Project, Hailo Edge AI Training and Deployment <ul style="list-style-type: none">Trained YOLO26 through transfer learning and reshaped its architecture with the Hailo Dataflow Compiler, running document detection on a Hailo-8L rated 13 TOPS at 1.5 W to speed up large-batch scanning.	Mar 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

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
Republic of Singapore Navy, Base Support Assistant <ul style="list-style-type: none">Compressed a 6-month food-waste analysis cycle into a 3-minute reporting process with an Excel VBA automation workflow inside a security-constrained environment.	Jan 2022 – Jan 2023

SKILLS AND CERTIFICATIONS

Technical: Python, TypeScript, React, Next.js, Three.js, FastAPI, PyTorch, ONNX, Docker, CI/CD, Azure; AI tools (Claude Code, ChatGPT, Codex, Gemini, ComfyUI); 3D CV: camera models, epipolar geometry, absolute pose (PnP), SfM, bundle adjustment, multi-view stereo
Certifications: NVIDIA Disaster Risk Monitoring with Satellite Imagery; Reinforcement Learning and Deep RL Python (Packt)