

RAHUL MITRA

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EDUCATION

National University of Singapore

Singapore

Bachelor of Engineering, Industrial Systems Engineering

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.
- Relevant coursework: Artificial Intelligence, 3D Computer Vision, Software Engineering, Simulation, Statistics, Operations Research, Linear Algebra, Probability.

EXPERIENCE

STMicroelectronics

Singapore

Operations Research (NUS System Design Project), Contract

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

Singapore

Robotics Vision Engineer (Blended AI+X)

Jul 2026 – Present

- Build vision systems for camera ISP enhancement, super-resolution, and image restoration under motion and low light.
- Engineer processing and evaluation stages that deliver perception-ready frame quality for downstream robotics vision.

Abbott Laboratories

Singapore

Operational AI Systems & Data Engineer (Contract)

Jun 2026 – Present

- Build an air-gapped process-intelligence platform for globally distributed spray-drying plants, spanning GPU OCR and layout parsing, recursive chunking, ONNX embeddings, a Chroma vector store, and LangChain over a locally hosted quantized Gemma model.

Abbott Laboratories

Singapore

Data Analytics and Project/Product Management Intern

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.
- Delivered practical AI upskilling to the regional engineering workforce for day-to-day operational use.

People's Association

Singapore

Platform & Solutions Engineer (Sparks Citizen Developer)

Sep 2025 – Sep 2026

- Delivered a digital garden-plot balloting platform from admin and public frontends through backend, GIS mapping, and deployment, now production-ready for national rollout across Singapore.

PROJECTS

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.

Maritime Deficiency Severity Forecasting: Maritime Hackathon 2025 (Team Lead)

2025

- Led model training for a maritime-inspection NLP system, fine-tuning a 109M-parameter BERT with DNN layers, gradient clipping, and hyperparameter optimization on the ASPIRE 2A supercomputer.

AgeWellLah.AI: NUS HealthHack 2025

2025

- Built an elderly-care triage chatbot using OpenAI GPT-4, InterSystems IRIS Vector Search, and Flask, with OAuth2-secured patient profiles and PDPA-aware design.

LEADERSHIP AND ACTIVITIES

NTUC Health Active Ageing Centre

Singapore

Elderly Care Volunteer

Sep 2025 – Present

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

SKILLS AND CERTIFICATIONS

Technical: Python, PyTorch, BERT, DNN, RAG, AI agents, GPT-4, Gemini, SEALION, ONNX, Chroma, local LLM serving (llama.cpp), vector search, model evaluation, NLP; vision: camera ISP, super-resolution, image restoration, projective geometry, camera models, fundamental and essential matrices, epipolar geometry, absolute pose estimation, three-view geometry, structure-from-motion (SfM) with bundle adjustment, two- and multi-view stereo, generalized cameras; HPC: ASPIRE 2A, CUDA; deep RL (PPO, A2C, DDPG, DQN)

Certifications: NVIDIA Disaster Risk Monitoring with Satellite Imagery; Deep Reinforcement Learning Hands-On (Packt)