

Teetham Treelayapewat

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Computer Science undergraduate at SUTD with three AI internships spanning computer vision, LLM agents/RAG, and model deployment.
Experience with C++/Python, PyTorch, GPU memory optimization, tool-calling systems, and sensor-based engineering.

Education

Singapore University of Technology and Design <i>B.Eng. Computer Science and Design (Full Scholarship)</i>	Sept. 2025 – Present Singapore
Kamnoetvidya Science Academy <i>High School Diploma (Full Scholarship) AP Computer Science A (Java) & Calculus BC: 5/5</i>	May 2022 – Mar. 2025 Thailand

Technical Skills

Programming: C++, Python, Java, C, Bash, SQL
AI & Machine Learning: PyTorch, YOLO, OpenCV, Transformers, LoRA, vLLM, RAG, agent tool-calling
Systems & Infrastructure: Linux, Git, Docker, CUDA, SLURM, NVIDIA DGX Spark / H100, LANTA Supercomputer
Hardware & CAD: SOLIDWORKS, Fusion 360, 3D printing, sensor data acquisition

Experience

AltoTech — <i>AI for building energy management</i> <i>AI Engineer Intern (Onsite + Remote)</i>	Aug. 2026 – Sep. 2026 Thailand
- Fine-tuned a 30B language model with LoRA for a 13-tool AI assistant running fully on-premises, without cloud inference. - Curated a 792-example EN/TH training corpus from real agent traces, including tool schemas and multi-turn tool calls. - Implemented hybrid RAG (vector + keyword) over 41 equipment manuals, improving retrieval from 8/12 to 10/12. - Expanded the agent evaluation suite to 289 cases testing tool selection, call arguments, retrieval, and safety. - Profiled GPU memory and implemented a chunked cross-entropy loss to train on full 32k-token inputs on one 80 GB GPU.	
BOTNOI Group — <i>conversational AI company</i> <i>AI Researcher & Development Intern (Remote)</i>	Jun. 2026 – Aug. 2026 Thailand
- Delivered the store open/close detection module of a 5-module AI CCTV monitoring system for a retail client, combining YOLO, OCR, and luminance analysis in a rule-based state machine. - Designed the proof-of-concept review interface for detection evidence and set up Docker Compose testing across 3 repos. - Reviewed 5 datasets and 7 papers to scope a Southeast Asian construction foundation model, then built door/window and room segmentation baselines on 400 floor plans.	
Meticuly — <i>3D-printed medical implants</i> <i>AI Development Engineer Intern (Extended to Remote Role)</i>	Jun. 2025 – May 2026 Thailand
- Developed a CT classification pipeline (DICOM → region classification → quality ranking) for the production CraNeXt system. - Reached 99.4% body-region accuracy (BiomedCLIP) and 96.1% craniectomy accuracy with a fine-tuned EVA-02, picked by benchmarking 8 models (5M–1,012M parameters) on accuracy, speed and size. - Achieved 1.12 mm error on cephalometric X-ray landmark detection with Thammasat University dentists, using multi-GPU training on the LANTA Supercomputer.	

Selected Projects

High-Energy Particle Simulation (C++ / Geant4)	Feb. 2023 – May 2025
- Wrote a C++ simulation in CERN's Geant4 to study Relativistic Runaway Electron Avalanches under varying magnetic and intermediate fields, tracking particle trajectories and interactions at scale. - Selected as Thailand Representative and Finalist, Regeneron ISEF 2025.	
Automated Tensile Strength Testing Machine	Mar. 2023 – Jun. 2023
- Designed and fabricated an automated physical testing system integrating embedded control, dual-range force sensors, real-time data acquisition, and custom 3D-printed components. - Presented at the 18th Siam Physics Congress (SPC2023).	

Honors, Awards & Leadership

Regeneron ISEF 2025 – Thailand Representative at the world's largest school science fair (Ohio, USA)
Beamline for Schools 2024 – Shortlisted Team, CERN & DESY
ASEAN Data Science Explorers 2024 – Top 10 Finalists, SAP & ASEAN Foundation
SOAR Challenge 2025 – Best Automation Award, SUTD
ThEP Hackathon 2024 – Second Runner-Up, Thailand Center of Excellence in Physics
Vice-President , Eco-Schools Project (WWF, 2024) – led the team to the International Green Flag Award, its highest rating
President , KVIS Science Inspiration Project (2023) – led a 5-day national STEM workshop across 10 schools