

Krittin Chaowakarn

k.chaowakarn@gmail.com | krittin-ch.github.io | github.com/krittin-ch

EDUCATION

Bachelor of Engineering in Electrical Engineering 08/2021–11/2025
Sirindhorn International Institute of Technology, Thammasat University Pathum Thani, Thailand

- Coursework: Linear Algebra, Robotics, Control Systems, Probability and Random Processes
- GPA: 3.87/4.00 – **First-Class Honors**

TUMexchange (Exchange Semester) 04/2025–09/2025
Technical University of Munich Munich, Germany

- Thesis: “*Real-Time Object Detection for Autonomous Driving: An Empirical Study in a Small-Scale Urban Environment*”, supervised by Prof. Andreas Herkersdorf
 - Coursework: Multimodal Deep Learning, Software Engineering
-

PREPRINTS

K. Chaowakarn, P. Sangwongngam, N. H. H. Aung, and C. Charoenlarnopparut, “*NV3D: Leveraging Spatial Shape Through Normal Vector-based 3D Object Detection*,” *arXiv preprint arXiv:2510.11632*, 2025. [Online]. Available: <https://arxiv.org/abs/2510.11632>

RESEARCH EXPERIENCE

Bachelor’s Thesis Student 04/2025–09/2025
Technical University of Munich Munich, Germany
Advisor: Prof. Andreas Herkersdorf

- Collected and curated an image dataset from the lab environment using k-means clustering on L2-normalized embeddings (unit hypersphere representation), reducing $\sim 1,000$ raw images to 119 distinct samples
- Conducted an empirical study on YOLO-based real-time object detection in a small-scale urban environment using low-power NVIDIA Jetson Nano, evaluating latency, throughput, and hardware utilization

Undergraduate Researcher / Research Intern 06/2023–04/2025
National Electronics and Computer Technology Center Pathum Thani, Thailand
Advisors: Dr. Paramin Sangwongnam and Assoc. Prof. Chalie Charoenlarnopparut

- Conducted research on LiDAR-based 3D multi-object detection for autonomous vehicles and proposed two normal-vector-guided sampling strategies that reduced redundant points by up to 55%
- Accelerated normal vector computation by $6.67\times$ through CUDA C++ parallelization, reducing runtime from 0.10 s (PyTorch) to 0.015 s

Technical Collaborator 01/2025–03/2025
Sirindhorn International Institute of Technology, Thammasat University Pathum Thani, Thailand
Advisor: Assoc. Prof. Itthisek Nilkhamhang

- Contributed to multi-robot formation research using Yahboom robots and ROS 2 simulations
- Deployed a vision-based target tracking system integrating YOLO (detection), DeepSORT (tracking), and face recognition (identity verification) for human-following robots

Research Intern 06/2022–07/2022
National Electronics and Computer Technology Center Pathum Thani, Thailand
Advisor: Dr. Paramin Sangwongnam

- Performed a deep feedforward neural network using TensorFlow for mmWave beam and blockage prediction utilizing Sub-6 GHz signals

TEACHING/ACADEMIC SERVICE

Teaching Assistant

Sirindhorn International Institute of Technology, Thammasat University

01/2023–Present
Pathum Thani, Thailand

- Graduate-level course grading: Computational Mathematics: Probability (M.Eng. in AI and IoT, SkillLane Online Platform)
- Laboratories: Control Systems, Electronics and Microelectronics, Digital Circuits, Electrical Engineering Crafting Skill
- Lectures grading: Electromagnetics, Linear Algebra and Optimization Method, Computational Tools in Electrical Engineering, Basic Electrical Engineering

Research Mentor

National Electronics and Computer Technology Center

03/2026–Present
Pathum Thani, Thailand

- Mentored high school interns in developing a self-supervised method for Thai temple crack detection using a PointNet++-based encoder

WORK EXPERIENCE

AI Engineer Intern

BOTNOI Group

06/2024–07/2024
Bangkok, Thailand

- Improved Thai SNOMED-CT medical vocabulary using a machine translation model, achieving over 80% reduction in translation ambiguities (70 out of 86 issues solved from a dataset of 385)
- Developed a greedy, embedding-based alignment algorithm for English-Thai (unsegmented) text to build genre-specific MT datasets, cutting manual matching time by 80% (50 to 10 hours)

HONORS AND AWARDS

Young Scientist and Technologist Program

08/2021–05/2025

- Full scholarship from the National Science and Technology Development Agency; 1 of 4 awardees (~0.25%)

Top 100 Team – KPIT Sparkle 2024

04/2024

- Selected among the top 100 teams (~0.45%) worldwide in KPIT Sparkle 2024, a global student innovation contest focused on vehicle technologies
- Proposed a risk assessment system for surrounding vehicles based on their driving behaviors, helping a driver with situational awareness and assisting insurance companies in evaluation

Keio University International Workshop 2023

11/2023

- Selected as one of 12 institute representatives to attend a workshop at Keio University, participating in laboratory activities and cultural exchange with Japanese students

EXTRACURRICULAR ACTIVITIES

Vice President of the Electrical Engineering Students Council

Sirindhorn International Institute of Technology, Thammasat University

01/2023–05/2025
Pathum Thani, Thailand

AI/ML Team Lead

Google Developer Student Club, Thammasat University

10/2023–05/2024
Pathum Thani, Thailand

- Presented a keynote workshop on *Introduction to Machine Learning and Its Applications* to an audience of 35 undergraduate participants

Head of the Kids in Control Workshop 2023

Sirindhorn International Institute of Technology, Thammasat University

11/2023
Pathum Thani, Thailand

- Organized a control systems and programming workshop, coordinated with the Electrical Engineering faculty, and taught 40 middle school students

SKILLS

Programming: Python (PyTorch, JAX), C/C++, Linux (CLI, Bash), Git

Languages: English (professional proficiency, TOEFL iBT 100); Thai (native); German (basic)