

EDUCATION

Bangkok, Thailand	<u>Chulalongkorn University</u>	Jul 2021 – May 2025
Bachelor of Engineering in Computer Engineering (May 2025, GPAX 3.66/4)		
Senior Project: Integrated Analysis of Very Heavy Rainfall Behavior using Precipitable Water Vapor from GNSS CORS and Meteorological Data using Spatio-Temporal Deep Learning Model		
Related Coursework: High Performance Architecture (A), Computer and System Architecture (B+), OS & Systems Programming (B+), Programming Methodology (A, 2 nd /150)		

TECHNICAL SKILLS

HPC-related: C, C++, Python, OpenMP, MPI, CUDA, Numba, GNU/Linux, NumPy, SciKit, Pandas, Tensorflow, Pytorch, IBM Qiskit
Embedded-related: Arduino, RTOS, ROS2, Verilog HDL
Cloud-related: Proxmox, Lambda AI, IBM Cloud, Cloudflare Zero Trust, MikroTik, Ceph

PROFESSIONAL EXPERIENCES

	<u>SPACE AC Institute of Technology</u>	Jan 2019 – Present
Co-founder, Researcher and Project Lead		2019 – Present
- Co-founded a space technology education and research initiative focused on project-based aerospace, computer engineering, and emerging technology programs for high-school and university students. - Led and mentored 100+ students across 35+ aerospace, IoT, and nanosatellite projects, guiding research, system design, and prototype development. - Directed 6 large-scale engineering projects, including the RADIANT solid-propulsion suborbital rocket, A.E.A. Sat nanosatellite, ALPACA CanSat, and PASSENGER high-altitude balloon missions. - Developed institutional training frameworks for space systems engineering, mentoring student leaders and enabling long-term project continuity. - Designed and deployed internal cloud and research infrastructure (LLM GPU cluster, Proxmox clusters, secure enterprise network, Zero-Trust access). - Contributed to nanosatellite avionics systems, IoT platforms, and communication protocols, releasing 10+ open-source codebases. - Taught short courses in Python programming and data analysis (MATLAB) and advised academic and industry partners on aerospace technology and project-based education.		
Internship: Research Engineer	<u>KASIKORN Business-Technology Group</u>	Jun 2024 – Jul 2024
Project: Cashier Room Security CCTV Footage Analysis & LLM with Vision - Designed and evaluated a Large Language Model with Vision architecture, including a comparative study of 7B-parameter LLMs. - Deployed an integrated pipeline for real-time security footage analysis with advanced object detection.		

PUBLICATIONS

- Klomchitcharoen, S., [and 11 others, including Thitasirivit, V.]. (2023). High-altitude balloon platform for studying the biological response of living organisms exposed to near space environment. <i>Heliyon</i>, 10(6). doi.org/10.1016/j.heliyon.2024.e27406. - Ngamdeevilaisak, B., [and 4 others, including Thitasirivit, V.]. (2021). High-School CanSat Model for Advancement of Agricultural Process in Thailand. <i>Trans. Jpn. Soc. Aeronaut. Space Sci., Aerospace Tech. Jpn.</i>, 19(3), 310–318. doi.org/10.2322/tastj.19.310.
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PATENTS

Petty Patent: “Nanosatellite learning kit” (2403003453). Issuer: Department of Intellectual Property, Thailand.

EVENTS, CONFERENCES & TALKS

- **Thailand Space Week 2024 by GISTDA:** Stage talk on topic “*Rocket & Spaceport*”, Bangkok, Thailand.
- **Committee on Space Research (COSPAR) 45th Scientific Assembly (2024):** Conference presentation on topic “*From High Schools to High Altitude: Advancing High-School-Level Engineering through Stratospheric Balloon Platforms for CubeSat Development and Scientific Exploration*”, Busan, South Korea. [[PDF](#)]
- **Spaceport America Cup 2024 Podium Session:** Podium presentation on topic “*Project RADIANT: Extensive Testing, Standardization and Formalization of KNSB-Based Solid Rocket Motor*”, Las Cruces, New Mexico, USA. [[PDF](#)]
- **MIT Media Lab Southeast Asian Forum (2022):** Showcase booth for cumulative SPACE AC projects.
- **32nd International Symposium on Space Technology and Science (ISTS, 2019):** Conference presentation on topic “*High-School CanSat Model for Advancement of Agricultural Process in Thailand.*” [[PDF](#)]

PROJECTS & EXTRACURRICULARS

System Engineer, Software Engineer **UWB Indoor Localization Project** **Jul 2024 – Present**

- **Cooperation:** *School of Physics, Suranaree University of Technology, Thailand.*
- Designed N-Round Two-Way Ranging Protocol; Fully-Distributed UWB-Based Ranging Network Communication Protocol for Intermittent Connection and Fully-Autonomous UWB Ranging Nodes; and Collision Avoidance Protocol and Congestion Control Protocol for UWB-Based Ranging Network. *UWB = Ultra-Wideband
- Implemented and evaluated device firmware, driver, and protocols to microcontroller (ESP32)-based nodes (Embedded C++).

Project Manager, System/Software Engineer, Propulsion Engineer **Project RADIANT** **Aug 2023 – Jul 2024**
(Spaceport America Cup 2024)

- **Cooperation:** *SPACE AC Team, Assumption College, Mahidol University, Defence Technology Institute Thailand.*
- Led and mentored a 30+ member team, managing technical development, centralized project, and financial systems.
- Designed and simulated flight dynamics, aerodynamics, and solid propulsion systems for suborbital rockets.
- Developed safety-critical rocket avionics software “LUNA” and automatic camera control for CubeSat payload “STELLA.”

Project Manager, Software Engineer **Project PASSENGER** **2021 – Present**

- **Cooperation:** *SPACE AC Team, Assumption College, MU, LESA, NIMT, CU, KMITL, EECi, BCC, KVIS.*
- Successfully launched and recovered more than 10 high-altitude balloons to 30+ km altitude with 100-km max range telemetry.
- Managed PASSENGER-I, II, III, and IV; and oversees PASSENGER-V, VI, and VII.
- Developed [microcontroller software](#) and ground control station software, including implementing multi-core architecture.

Head of Course Planning **AC x FSG Aerospace Camp 2023** **Apr 2023 – May 2023**

- **Cooperation:** *SPACE AC Team, Assumption College, and Saint Gabriel's Foundation Network.*
- A nanosatellite workshop & design camp with courses, workshops, and 30-km high-altitude balloon launches.
- Having over 50 students across Thailand participated in this camp.
- Responsible for course planning and managing 5 skills [workshops](#) and [classes](#).

Unpublished Preprints

- *GNSS-Based GNC System Design, Development and Analysis of a Large-Scale Autonomous Delta-Wing CanSat Model for Explorational Purposes.* [[PDF](#)]
- *Thailand High-School Agricultural CanSat Model: Applications in Vladimir, Russia.* [[PDF](#)]

Other Related Projects

- [[PDF](#), [PDF](#)] Quantum String Matching Algorithm Design for Sequence Alignment Problem in Bioinformatics.
 - with **Sequence Alignment Algorithm Block Parallelism via CPU Threading via OpenMP and GPU Computing via CUDA.**
- **lib-xcore** [[Git](#)]: A comprehensive C++ library targeted for, but not limited to, embedded system. Incorporates additional features: static-memory containers, non-blocking delay timer, and low-overhead static task scheduling.
- **vt-linalg** [[Git](#)]: Compile-time Optimized C++ Linear Algebra Algorithms & Kalman Filter Template Library.
- **vt-ugcs** [[Git](#)]: Universal Ground Control Station Python desktop application designed for a variety of space missions and labs
- **Co-working Spaceless:** An application utilizing edge computer vision to perform perspective warp transformation and detect entities in the frame to determine vacancy in a co-working space.
- **LuckChain** [[Git](#)]: Implementation of blockchain secure smart contracts for decentralized zero-trust lottery system using Solidity.
- **Minimum Dominating Set (MDS) Parallel Multi-Solver** using Google OR-Tools [[Git](#)] (High Performance Architecture course).