

## EDUCATION

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Bangkok, Thailand	<u>Chulalongkorn University</u>	Jul 2021 – Present
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Bachelor of Engineering in Computer Engineering (Expected May 2025, GPA 3.59/4)

**Capstone 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<sup>nd</sup>/150)

## PROFESSIONAL EXPERIENCES

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	<u>SPACE AC Institute of Technology</u>	Jan 2019 – Present
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**Co-founder & Independent Researcher**

2019 – Present

- Co-found SPACE AC Institute of Technology, focusing on advancing high-school- and college-level space project-based education, research, and development in aerospace, computer engineering, and emerging technologies.
- Designed, implemented, and administered future-proof organizational structure to support project scaling.
- Initiated space-project educational framework, including suborbital high-power rocketry and nanosatellites design.

**Consultant & Project Advisor**

2022 – Present

- Mentored 35+ projects in aerospace, IoT, and nanosatellite domains, guiding 100+ students.
- Advised academic institutions and industries on aerospace technology integration and project-based education.
- Led prototype development for IoT nanosatellite platforms and facilitated partnerships to secure funding and technical support.

**Lecturer for Mini-Courses**

2021 – 2023

- COMP101** [[Home](#)]: Introduction to Computer Programming (Python)
- DA101** [[Home](#)]: Fundamental Data Analysis (MATLAB)

**Project Manager**

2019 – Present

- Directed 6 large-scale projects, including Project RADIANT solid-propulsion suborbital rocket, A.E.A. Sat, ALPACA CanSat, PASSENGER High-altitude balloon projects, several workshops, and camp programs.
- Designed and implemented training programs for over 50 students and junior staffs on space systems engineering.
- Mentored student leaders, ensuring successful handovers for ongoing projects and continuity in institutional knowledge.

**System Engineer, Software Engineer**

2019 – Present

- Deployed a private cloud cluster (Proxmox, OpenStack) for internal cloud-based projects.
- Designed secure enterprise network infrastructure, integrating Cloudflare Zero Trust network for external access.
- Contributed to nanosatellite avionics systems and developed 10+ publicly available codebases and communication protocols.

**Internship: Research Engineer**

KASIKORN Business-Technology Group

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

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- 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.  
*Heliyon*, 10(6). [doi.org/10.1016/j.heliyon.2024.e27406](https://doi.org/10.1016/j.heliyon.2024.e27406).
  - Ngamdeevilasak, B., [and 4 others, including **Thitasirivit, V.**]. (2021).  
High-School CanSat Model for Advancement of Agricultural Process in Thailand. *Trans. Jpn. Soc. Aeronaut. Space Sci., Aerospace Tech. Jpn.*, 19(3), 310–318. [doi.org/10.2322/tastj.19.310](https://doi.org/10.2322/tastj.19.310).

## PATENTS

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

## 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, OpenStack, IBM Cloud, Cloudflare Zero Trust, Ceph

## EVENTS, CONFERENCES & TALKS

- **Thailand Space Week 2024 by GISTDA:** Stage talk on topic “*Rocket & Spaceport*”, Bangkok, Thailand.
- **Committee on Space Research (COSPAR) 45<sup>th</sup> 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:** Showcase booth for cumulative SPACE AC projects.
- **32<sup>nd</sup> 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).