VIVATSATHORN THITASIRIVIT

vivatsathorn@outlook.co.th | +66 84 884 4884 | linkedin.com/in/vivatsathorn | vt.in.th | github.com/vtneil | Bangkok, Thailand

EDUCATION

Bangkok, Thailand **Chulalongkorn University** **Aug 2021 – Present**

Bachelor of Engineering in Computer Engineering

Academic Achievements

- Current GPAX 3.56/4
- 2nd place out of 150 students in Course: Programming Methodology I (2022)

PROFESSIONAL EXPERIENCES

Project Advisor/Co-founder **SPACE AC Institute of Technology** **Jan 2019 – Present**

- Thailand's premier institute of technology offering full-scale space project-based engineering programs for high school.
- Provided expert engineering advice to more than 100 high-school students.
- Directed 6 projects, mentored over 30 projects, and conducted courses on embedded systems programming.
- Developed more than 10 publicly available codebases and academic manuscripts.
- Showcased numerous projects and developments at MIT Media Lab Southeast Asia Forum.

PUBLICATIONS

Klomchitcharoen, S., Wechakarn, P., Tangwattanasirikun, T., [and 9 others, including **Thitasirivit, V.**]. (2023). High-altitude balloon platform for studying the biological response of living organisms exposed to near space environment. *IEEE Access*. **In press**.

Ngamdeevilaisak, B., Vongbunsin, C., Uthanpathumros, C., Thitasirivit, V., Phumiprathet, P., & Chodkaveekityada, P. (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.

RESEARCH PROJECTS

Thitasirivit, V. (2023). Quantum Approaches to Sequence Alignment. *Extended Research Project*. Available at: doi.org/10.13140/RG.2.2.34017.68962.

EXTRACURRICULAR

Lead System Architect & Developer **AI & SPACE Innoventor Centre** **Feb 2023 – Present**

- Comprehensive cloud computing provider and educational platform for machine learning (in development).
- Funded by Thailand's Ministry of Digital Economy and Society (DE).
- Responsible for system architecture design, infrastructure development and hardware selection and assembly.
- Aimed to push at least 5 feasible projects developed on the hardware from hackathon for locals and society.

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

- Nanosatellite 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.

PERSONAL PROJECTS

Project Highlights (2023)

- *Quantum String Matching Algorithm* Design for Sequence Alignment Problem in Bioinformatics.
- *Sequence Alignment Algorithm Block Parallelism* via CPU Threading via OpenMP and GPU Computing via CUDA.
- Compile-time Optimized C++ Linear Algebra Algorithms & Kalman Filter Template Library.
- Dynamic Generalized Task Scheduling C++ Library for Low-Level Embedded System Programming.
- Active Stabilization Control Algorithm for High-Power Rocket Flight's Optimization.

Previous Projects

- Quadtree Data Structure C++ Implementation Library for Efficient Collision Detection and Geospatial Indexing.
- myCourseVille Companion App: A full-stack application designed to streamline assignment tracking and work schedule management for students, enhancing productivity.
- Universal Ground Control Station Python desktop application designed for a variety of space missions and labs.

SKILLS

- Core languages: C, C++, Java, Python, Scala, JavaScript, HTML, SQL, MongoDB
- Development & Version Control: GNU/Linux, Unix, Git (GitHub, GitLab)
- Computing & Networking: (OpenMP, CUDA, MPI, Numba), (AWS, Linode, IBM Cloud), (Cloudflare)
- Data Analysis Tools: (MATLAB, NumPy, SciKit, Pandas), (Plotly, Matplotlib)
- Specialized Technologies: *Quantum Computing* (IBM Qiskit), *FPGA* (Verilog HDL), *Embedded Systems* (STM32, Arduino, RTOS), *Robotics* (ROS2), *GUI Development* (Qt, PyQt, JavaFX, Tkinter), *Web Development* (Python Flask)
- Documentation & Documents: LaTeX, Markdown, Doxygen