Tharit Sinsunthorn

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ABOUT

I'm an Aerospace Engineering student with a strong interest in space missions and exploration. I have been working on developing legged robot software for lunar surface outpost construction at the Space Robotics Laboratory. Currently attending the Master's degree course at Tohoku University.

RESEARCH & EXPERIENCES

SpaceData Inc.: Innovation team, Space Robotics simulation development Feb 2025 - Present

- Int-Ball2 Simulator Isaac Sim (github)

JAOPS, Space Robotics and Simulation Intern: Oct 2024 - Present

- Implementation of robot operating system inside realistic lunar terrain simulation inside.
- Implement rover's sensors and data visualization, using well-know tools, including Foxglove studio, Rerun.io, and YAMCS studio (jaops-sim github).

Tohoku University, Space Robotics Laboratory: June 2022 - Present

- Develop adaptive RL-based quadrupedal locomotion control on rough terrain in low-gravity environments.
- Develop software for module recognition of modular legged robots of Moonshot project Goal 3B.
- Machine learning, building neural network, image processing and object detection software development.
- Designing CAD models using Solidworks.

Projects & Published Papers

- "ISS Intra-Vehicular Robot Operation Simulation" (UKAREN 2025)
- "Robotics Simulation and Continuous Integration Platform for Lunar Surface Exploration Rovers and On-orbit Services Missions" (I-SAIRAS 2024, co-author)
- "Lunar Surface Visual Rendering, Dynamics, Solar Power and Thermal Simulation for the Operations of Lunar Rover Missions"(IAC 2024, co-author)
- "Moonbot 0: Design and Development of a Modular Robot for Lunar Exploration and Assembly Tasks" (SCI).
- "Toward Autonomous Assembly of Modular Robots and Structures using Real-time Object Detection and Imitation Learning for Lunar Missions" (AROB-ISBC-SWARM 2024, co-author).

SKILLS

Programming Languages:	Python (mainly used), C++, Matlab.
Frameworks and Libraries:	NumPy, Pytorch, Pygame, YOLO, Scikit-learn, OpenCV, IsaacLab.
Robotics Application:	ROS2, ROS2_control, SLAM, Nav2, Gazebo, Isaacsim.
Platforms:	Linux environment.
Tools:	Git, Github.
CAD software:	Solidworks, Blender.
Others:	Tasks and project management, Problem solving, English communication.

EDUCATION

Master: Tohoku University, Aerospace Engineering Master Program course. 2024 - 2026
Bachelor: Tohoku University IMAC-U (International Mechanical and Aerospace Course). 2020 - 2024
High School: Mahidol Wittayanusorn school 2017 - 2020

EXTRA-CURRICULAR ACTIVITIES & REWARDS

- **Japanese Government (MEXT) Scholarship:** University Recomendation (SGU) 2023 - 2025
- **The 15th Thailand Astronomy Olympiad:** Bronze medal award. 2018
- **STEM Project:** problem solving using engineering and communication skills. 2017 - 2019