Thaweerath PHISANNUPAWONG

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🎓 EDUCATIONS

August 2017 July 2021	Bachelor of Engineering (First Class Honor)	Aeronautical Engineering and Commercial Pilot, GPA 3.97, Department of Aeronautical Engineering, International Academy of Aviation Industry (IAAI), King Mongkut's Institute of Technology Ladkrabang,(KMITL), Bangkok, Thailand › Thesis article : Vision-based attitude estimation for spacecraft docking operation through deep learning algorithm › Develop a vision-based spacecraft pose estimator using a pre-trained CNN model to determine spacecraft attitude and position using a high-resolution synthetic data. The trained model achieved moderately high accuracy in extracting the spacecraft's pose from the image.
August 2022 Current	Master's degree candidate	Aerospace Engineering, MSc, Department of Aerospace Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, South › Granted full financial support of KAIST International Student Scholarships › Research fields : Aerospace Data Application, Time series analysis, Representation Learning. › Thesis : Air Traffic Trajectory Contrastive Representation Learning. › To facilitate the downstream classification and clustering, a contrastive learning framework is being developed to extract the representation of aircraft trajectories. The model utilizes the continuity of conducting air traffic procedures.

💼 EXPERIENCES

August 2019 July 2021	Undergraduate Researcher	Air-Space Control, Optimization, and Management Laboratory (ASCOM-LAB), IAAI, KMITL › Alongside doing my thesis, I work as a researcher and a research assistant in many laboratory projects that involve guidance, navigation, and control combined with machine learning algorithms. Moreover, the works mainly focus on the frontier research of intelligence aircraft and spacecraft systems.
June 2020 August 2020	Research Assistant	National Astronomical Research Institute of Thailand, NARIT, (Internship) › During the internship period, the Vision-based pose estimator has been improved in its estimation performance and reliability with higher estimation accuracy. Also, the simulation software has been built in Autodesk Maya to simulate the spacecraft's motion. Furthermore, The simulator is capable of generating the training images and experimental data for the contribution of future research.
July 2021 August 2022	Aerospace Engineer	Satang Space Company Limited, Bangkok, THAILAND, (Full-time) › Since Satang Space Co. Ltd. is a spin off tech startup from Air-Space Control, Optimization, and Management Laboratory (ASCOM-LAB), KMITL, my responsibility is to continue working on the existing research projects in order to commercialize them to the space industry, specifically on SSA.
August 2022 Current	MSc Student Researcher	Laboratory for Information and Control System (LiCS), KOREA, SOUTH, KAIST › I currently work as a master's student researcher participating in several funded research projects. I am participating in the airport traffic management project, which is the intensive application of machine learning on time series, particularly about trajectory representation learning, with a focus on the trajectories of moving objects. I also work on space data application research concerning temporal dynamics of space situation awareness (SSA) data.

📖 Publications

2019	Insom, K.; Kamsing, P.; **Phisannupawong, T.**; Torteeka, P. Outlet Temperature Prediction of Boiling Heat Transfer in Helical Coils through Artifcial Neural Network. Proceedings 2019, 39, 16.
2020	**Phisannupawong, T.**; Kamsing, P.; Torteeka, P.; Yooyen, S. Vision-based attitude estimation for spacecraft docking operation through deep learning algorithm, IEEE, The 22nd International Conference on Advanced Communications Technology ,pp 281-284.
2020	Kamsing, P.; Torteeka, P.; Yooyen, S.; Yenpiem, S.; Delahaye, D.; Notry, P.; **Phisannupawong, T.**; Channumsin, S.; Aircraft trajectory recognition via statistical analysis clustering for Suvarnabhumi international airport, IEEE, The 22nd International Conference on Advanced Communications Technology, pp 290-297
2020	**Phisannupawong, T.**; Kamsing, P.; Torteeka, P.; Channumsin, S.; Sawangwit, U.; Hematulin, W.; Jarawan, T.; Somjit, T.; Yooyen, S.; Delahaye, D.; Boonsrimuang, P. Vision-Based Spacecraft Pose Estimation via a Deep Convolutional Neural Network for Noncooperative Docking Operations. Aerospace, MDPI, 7, 126.
2021	Hematulin, W.; Kamsing, P.; Torteeka, P.; Somjit, T.; **Phisannupawong, T.**; Jarawan, T. Multiple-Unmanned Air Vehicle Trajectory Optimization during Close-Approach Boundary based on Line-of-Sight Technique, Proceedings of the Innovation Aviation & Aerospace Industry - International Conference 2021
2022	Hematulin, W.; Kamsing, P.; Torteeka, P.; Somjit, T.; **Phisannupawong, T.**; Jarawan, T. Cooperative Motion Planning For Multiple UAVs via the Bezier Curve Guided Line of Sight Techniques, IEEE, The 23rd International Conference on Advanced Communications Technology.
2022	Jarawan, T; Kamsing, P.; Torteeka, P.; Manuthasna, S.; Hematulin, W.; Chooraks, T.; **Phisannupawong, T.**; Sangkarak, S.; Mungkhud, S.; Somjit, T. Wi-Fi Received Signal Strength based Indoor Localization System by K-Nearest Neighbors fingerprint integrated D*algorithm, IEEE, The 23rd International Conference on Advanced Communications Technology.
2023	Hematulin, W.; Kamsing, P.; Torteeka, P.; Somjit, T.; **Phisannupawong, T.**; Jarawan, T. Trajectory Planning for Multiple UAVs and Hierarchical Collision Avoidance Based on Nonlinear Kalman Filters. Drones, MDPI, 7, 142.
2024	**Phisannupawong, T.**; Damanik, J; Choi H. Contrastive Learning-Based Air Traffic Trajectory Representation : A Case Study on Incheon International Airport (Submitted for EuroGNC 2024)

▤ Technical Skills

Word Processing	Microsoft Office, LaTeX
Computer Languages	Python, MatLab, SQL
Techniques	Machine Learning, Computer vision, Time-series data mining, High-Performance Computing
Simulation	Unreal Engine 4, Autodesk Maya
OS Peferences	Windows, Linux(Ubuntu; Desktop, Server)

✚ Interests

> Machnine Learning, Computer vision, Time-series representation learning, LLMs application for time-series and images.
> Aerospace data application, Space Situational Awareness, Intelligent Air-traffic Control system.

🎓 Honors and Awards

2018-2021	Certificate of excellence in academic score, KMITL
2018-2021	Scholarship for excellence in academic score, KMITL
2019	Certificate of participation, 2nd International Summer School Automotive Engineering, 2019, Nanjing Tech University, Pujiang Institute.
2020	Certificate of academic contribution to the faculty (research), academic year 2019, IAAI, KMITL

🎓 Outreach and Volunteering

2018	Facility visit, and aviation industry observations, Aviation and Electronics support, PTE, LTD, Singapore
2019	Exchange Student, Nanjing Tech University Pujiang Institute, Nanjing, China, 2nd Summer School Automotive Engineering, A collaborative program of KMITL, KMUTT, Chulalongkorn University, Tokyo Tech University, and Nanjing Tech University Pujiang Institute
2019-2020	Vice President (Academic), Student association of International Academy of Aviation Industry, KMITL
2022	Participation, Korean Society for Aeronautical & Space Sciences Conference, Fall 2022, Jeju, Korea, South.
2022	Participation, International Conference on Robot Intelligence Technology and Applications (RiTA 2022), Griffith University Gold Coast Campus, Australia.
2023	Participation, The Thirty-seventh Annual Conference on Neural Information Processing Systems (NeurIPS 2023), New Orleans, United States.