Hyunsang Park

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Education

Ph.D. in Aeronautics and Astronautics Engineering Aug. 2021 – May. 2025 (expected)
Purdue University, West Lafayette, Indiana
- Advisor: Prof. Inseok Hwang

Master of Science in Aerospace Engineering Mar. 2018 – Feb. 2020
Seoul National University, Seoul, Republic of Korea
- Advisor: Prof. Youdan Kim
- Thesis title: *Adaptive Fault Tolerant Control Design for Nonlinear Aircraft System with Actuator Faults*
- GPA 4.07/4.3

Bachelor of Science in Mechanical & Aerospace Engineering Mar. 2012 – Feb. 2018
Seoul National University, Seoul, Republic of Korea
- Cumulative GPA 3.73/4.3

Publications

Journal Paper

H. Park and Y. Kim, "Adaptive Fault-Tolerant Flight Control Using a Nonlinear Reference Model", *IEEE Transactions on Aerospace and Electronic Systems, Vol. 57, No. 5, 2021, pp. 3337-3356*

C. Deng, H. Choi, **H. Park** and I. Hwang, "Trajectory Pattern Identification and Classification for Real-time Air Traffic Applications in Area Navigation Terminal Airspace", *Transportation Research Part C: Emerging Technologies*, Vol. 142, 2022

H. Choi, C. Deng, **H. Park**, and I. Hwang, "Gaussian Mixture Model-based Online Anomaly Detection for Vectored Area Navigation Arrivals," *Journal of Aerospace Information Systems* (accepted)

Conference Proceedings

H. Park, and I. Hwang, "Situational Anomaly Detection in the Terminal Airspace Using Multi-Agent Trajectory Prediction," AIAA SciTech 2023 Forum, National Harbor, MD, January 2023 (accepted)

H. Park and Y. Kim, "Nonlinear Geometric Fault Detection and Isolation of Redundant Actuators in Aircraft", *The Korean Society for Aeronautical and Space Sciences 2019 Fall Conference*, Jeju, Korea, November 2019

H. Park and Y. Kim, "L1 Adaptive Backstepping Control of Aircraft under Actuator Failures", *8th European Conference for Aeronautics and Aerospace Sciences*, Madrid, Spain, July 2019

H. Park and Y. Kim, "Model Free Estimation of Wind and Air Velocity of UAV Using Extended Kalman Filter", *The Korean Society for Aeronautical and Space Sciences 2018 Fall Conference*, Jeju, Korea, November 2018

Research Experience

Graduate Research Assistant Aug. 2021 – Ongoing

Flight Dynamics & Control/ Hybrid Systems Lab, Purdue University

- Project title: "Big Data-Based Aviation Safety Technology and Data Management Platform Development" supported by Ministry of Land, Infrastructure and Transport

Graduate Research Assistant Mar. 2018 – Feb. 2020

Flight Dynamics and Control Laboratory, Seoul National University

- Project title: "Development of Reconfigurable Flight Control Law against Aircraft Sensor/Actuator," supported by Korea Aerospace Industries
- Developed aircraft model-based and model-free fault detection and diagnosis of air data system
- Developed fault detection and isolation algorithm and adaptive fault-tolerant controller for aircraft with redundant input

Honors and Awards

Brain Korea 21 Plus Research Scholarship (stipend, 4 semesters) Spring 2018 - Fall 2019
Ministry of Education, Republic of Korea

Outstanding BS Thesis Presentation Award Dec. 2017
Department of Mechanical & Aerospace Engineering, Seoul National University

- For the presentation of the BS Thesis, "*Design and Control of an Autonomous Quadrotor for Flip Maneuver"*

Merit-based Scholarship Fall 2019, Fall 2017, Spring 2017, Fall 2012
Seoul National University

National Scholarship for Science and Engineering Fall 2016
Korea Student Aid Foundation

Eminence Scholarship Spring 2013, Fall 2013
Seoul National University

Other Experience

Airforce Enlisted Jan. 2014 - Jan. 2016

Staff Sergeant, Republic of Korea Airforce

Amateur Astronomy Association (university club) Mar. 2012 - Jan. 2014

Seoul National University

- General Affairs (Jul. 2013 - Dec. 2013), Regular Member (Jul. 2012 - Jan. 2014)

Miscellaneous

Languages: Korean(native), English(fluent)
Programming: Matlab, Simulink, Python, C/C++ , Java
Computer-Aided Design: SolidWorks, CATIA