

EDUCATION

Doctor of Philosophy in Mechanical Engineering (Systems, Measurement, and Controls)

Purdue University, West Lafayette, IN

Dec 2013

Thesis: Scalable Autonomous Operations of Unmanned Assets

Master of Science in Mechanical Engineering (Systems, Measurement, and Controls)

Purdue University, West Lafayette, IN

Dec 2010

Thesis: Real-Time UAV Autonomy through Offline Calculations

Bachelor of Science in Mechanical Engineering

University of Minnesota, Twin Cities, MN

Aug 2009

RESEARCH INTEREST

- Digital-twin modeling (MILS/SILS/PILS/HILS) and mission-level validation of autonomous aerial systems
- Hybrid propulsion system design and optimization for eVTOL and small UAV platforms
- Energy-aware and collision-free path planning using bio-inspired control and reinforcement learning
- Cooperative control and task allocation for multi-UAV heterogeneous missions

PROFESSIONAL EXPERIENCE

Chosun University, Department of Aerospace Engineering, Associate Professor Mar 2020 – Current

- 34 SCIE papers, 10 patents, and led international collaborations with Poland, Malta, Ethiopia, and Switzerland

Unmanned System (Startup Company), CEO

Oct 2021 – Current

- Co-developed a rocket-based foldable UAV for environmental monitoring (50% shareholder)

Dongshin University, Department of Electric Vehicle Engineering, Assistant Professor Sep 2018 – Feb 2020

- Head of the Department of Electric Vehicle Engineering (Mar 2019 – Feb 2020)

Chodang University, Department of Drone System, Assistant Professor

Aug 2016 – Aug 2018

- Leading the department by setting up a new curriculum

Youth Period Co., Ltd. (Startup Company), CTO

Mar 2014 – Apr 2018

- Co-founded and developed Korea's first electric skateboard startup (50% shareholder)

Samsung SDI, Automotive Battery Pack System, Senior Engineer

Jan 2014 – Aug 2016

- Analyzed overall ASW and BSW of xEV battery pack SW developed on the base of AUTOSAR

Samsung Advanced Institute of Technology (SAIT), Energy Lab, R&D Intern

Jun 2012 – Aug 2012

- Designed speed bump and wind turbine prototypes for energy harvesting in WSN applications.

PUBLICATION

- S. Jung and Y. Kim*, MILS and HILS Analysis of Power Management System for UAVs, IEEE Access, vol. 11, pp. 79240-79255, 2023 (ISSN 2169-3536) (20230802, IF: 3.4, Q2, 65.4%)
- S. Jung and A. Tullu*, Characteristics Evaluation of 14 Battery Equivalent Circuit Models, IEEE Access, vol. 11, pp. 117200-117209, 2023 (ISSN 2169-3536) (20231018, IF: 3.4, Q2, 65.4%)
- S. Jung*, Development and Verification of Hybrid Power Controller Using Indoor HIL Test for the Solar UAV, MDPI Energies, vol. 13, no. 2110, pp. 1-20, 2020 (EISSN 1996-1073) (20200424, IF: 3.0, Q3, 37.1%)
- S. Jung, Y. Jo, and Y. Kim*, Aerial Surveillance with Low-Altitude Long-Endurance Tethered Multirotor UAVs Using Photovoltaic Power Management System, MDPI Energies, vol. 12, no. 1323, pp. 1-14, 2019 (EISSN 1996-1073) (20190406, IF: 3.0, Q3, 37.1%)
- S. Jung*, Y. Jo, and Y. Kim, Flight Time Estimation for Continuous Surveillance Missions Using a Multirotor UAV, MDPI Energies, vol. 12, no. 867, pp. 1-15, 2019 (EISSN 1996-1073) (20190305, IF: 3.0, Q3, 37.1%)