

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 fixed-wing UAV system for environmental data achievement (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

- Contribute advice on the overall procedures from the start-up item selection and the development of Korea's first electric skateboard to the marketing and the item performance upgrading (50% Shareholder)

Samsung SDI, Automotive Battery Pack System, Senior Engineer

Jan 2014 – Aug 2016

- Developed the BMS testbench for validating and evaluating the existing BMS algorithms which are currently being used for IT, xEV, and ESS systems
- Developed KF based SOC estimation algorithm for xEV systems and evaluated using Autonomie vehicle simulator
- Developed hybrid battery pack combining high-power pack and high-capacity pack for increasing flight time of the octocopter
- 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

- Performed concept design of a speed bump and a wind turbine for energy harvesting application, especially for the WSN
- Performed ANSYS stress analysis for various piezoelectric cantilever beams and tapered beam designs resulting in good stress distributed candidate design

PUBLICATIONS (Journal, SCIE)

Under Review

1. A. Tullu, and **S. Jung***, Integrated Gimbal-Robot-Arm Design and Control System for Fixed-wing Unmanned Aerial Robot, ELSEVIER Aerospace Science and Technology, Under Review, 2025 (ISSN 1270-9638) (TBD, IF: 5.8, Q1, 97.27%)
2. L. Michael, A. Tullu, Y. Mekonnen, K. Baek, and **S. Jung***, Accelerated Airfoil Optimization through A Discriminator Approach, IEEE Access, Under Review, 2025 (ISSN 2169-3536) (TBD, IF: 3.4, Q2, 65.4%)
3. M. Yitayih, A. Gebreegzabher, A. Tullu, and **S. Jung***, Designing Energy Based GA Tuned PD Swing-up and Adaptive LQG Based Stabilizing Controller for Rotary Inverted Pendulum, SPRINGER Journal of Mechanical Science and Technology, Under Review, 2025 (ISSN 1738-474X) (TBD, IF: 1.7, Q3, 35.4%)
4. E. Andarge, Y. Mekonnen, A. Ordys, A. Tullu, and **S. Jung***, Differential Drive Mobile Robot Navigation System Using Reinforcement Learning with RRT* Path Planning Algorithm, WORLD SCIENTIFIC Unmanned Systems, Under Review, 2025 (ISSN 2301-3850) (TBD, IF: 2.4, Q2, 55.6%)

Accepted

[2025]

1. W. Zegeye, S. K. Jeong, H. Y. Park, G. Teklay, E. Kim, G. Teklay, S. Kim, A. Tullu, and **S. Jung***, Battery-Integrated AUV SOC Analysis Using Model-Based Nonlinear PID Controller with Disturbance Observer, IEEE Access, vol. 13, pp.190317-190332, 2025 (ISSN 2169-3536) (20251030, IF: 3.4, Q2, 65.4%)
2. S. Kim, A. Tullu, and **S. Jung***, Enhancing Sensor Accuracy in Mobile Multi-sensor Systems for Atmospheric Monitoring Using Disturbance Observer and Sensor Estimators, FRONTIERS Frontiers in Marine Science, vol. 12, pp. 1-15, 2025 (ISSN 2296-7745) (20251023, IF: 3.0, Q1, 88.8%)
3. E. Kim, S. Kim, and **S. Jung***, Battery SOC and SOH Estimation Based on Sage-Husa Extended Kalman Filter and Feedforward Neural Network, IEEE Access, vol. 13, pp.174044-174056, 2025 (ISSN 2169-3536) (20251006, IF: 3.4, Q2, 65.4%)
4. Y. Abebe, H. Bayu, T. Mengistu, A. Tullu, and **S. Jung***, Secondary Hybrid Decomposition Strategy for Wind Power Prediction using Long Short-Term Memory with Crisscross Optimization, IEEE Access, vol. 13, pp.142186-142202, 2025 (ISSN 2169-3536) (20250811, IF: 3.4, Q2, 65.4%)
5. A. Zegeye, S. K. Jeong, H. Y. Park, and **S. Jung***, Vision-Based Control of Robotic Arm Mounted on Unmanned Surface Vehicle for Rocket Recovery, IEEE Access, vol. 13, pp.114038-114055, 2025 (ISSN 2169-3536) (20250709, IF: 3.4, Q2, 65.4%)
6. S. Kim, T. Molla, A. Zegeye, and **S. Jung***, Energy-Efficient Control System for Small-Scale Rocket Recovery, IEEE Access, vol. 13, pp.104521-104537, 2025 (ISSN 2169-3536) (20250613, IF: 3.4, Q2, 65.4%)
7. **S. Jung***, MILP-based Cost and Time-Competitive Vehicle Routing Problem for Last-Mile Delivery Service Using a Swarm of UAVs and UGVs, ELSEVIER Journal of Air Transport Management, vol. 124, 102736, 2025 (ISSN 0969-6997) (20250401, IF: 3.9, Q2, 69.8%)
8. E. Kim and **S. Jung***, Battery State of Health Estimation Methods: Implementation and Comparison of 11 Algorithms, IEEE Access, vol. 13, pp. 55599-55615, 2025 (ISSN 2169-3536) (20250328, IF: 3.4, Q2, 65.4%)
9. L. Honelign, Y. Abebe, A. Tullu, and **S. Jung***, Deep Reinforcement Learning Based Robotic Arm's Target Reaching Performance Enhancement, MDPI Actuators, vol. 14, no. 165, pp.1-22, 2025 (EISSN 2076-0825) (20250326, IF: 2.2, Q2, 58.7%)
10. A. Abagero, Y. Abebe, A. Tullu, Y. S. Jung, and **S. Jung***, Deep Learning-Based MPPT Approach to Enhance CubeSat Power Generation, IEEE Access, vol. 13, pp. 40076-40089, 2025 (ISSN 2169-3536) (20250226, IF: 3.4, Q2, 65.4%)
11. A. Tullu, **S. Jung**, S. Lee, S. Ko*, Effects of Model-Specific Parameters on the Development of Custom Module in PX4 Autopilot Software-in-the-Loop, WILEY International Journal of Aerospace Engineering, vol. 2025, 4886534, 2025 (ISSN 1687-5966) (20250202, IF: 1.1, Q3, 39.4%)

[2024]

12. **S. Jung** and Y. Kim*, Extremum Seeking-Based Radio Signal Strength Optimization Algorithm for Hoverable UAV Path Planning, MDPI Electronics, vol. 13, no. 4064, pp. 1-13, 2024 (EISSN 2079-9292) (20241016, IF: 2.6, Q2, 54.2%)
13. D. Seo, **S. Jung***, and Y. Kim*, Compact Filtering Power Divider for mm-Wave Applications using Integrated

Passive Device Technology, WILEY Microwave and Optical Technology Letters, vol. 66, no. 4, 2024 (ISSN 0895-2477) (20240415, IF: 1.0, Q4, 19.1%)

14. **S. Jung***, Precision Landing of Unmanned Aerial Vehicle under Wind Disturbance Using Derivative Sliding Mode Nonlinear Disturbance Observer-Based Control Method, MDPI Aerospace, vol. 11, no. 265, pp. 1-14, 2024 (EISSN 2226-4310) (20240329, IF: 2.1, Q2, 74.0%)

[2023]

15. S. Kim, A. Tullu, **S. Jung***, Linearized State-Space Model-Based Attitude Control for Rocket With Four Controllable Fins - Part 1-1: Basic Modeling and Identification, IEEE Access, vol. 11, pp. 146014-146029, 2023 (ISSN 2169-3536) (20231130, IF: 3.4, Q2, 65.4%)
16. **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%)
17. **S. Jung**, J. K. Seo, I. Jang, J. Kim, J. Shim, and J. Woo*, Development and Verification of a Diagnostic Technology for Waste Battery Deterioration Factors, WILEY ChemPhysChem, vol. 24, no. 21, pp. 1-15, 2023 (ISSN 1439-4235) (20230904, IF: 2.3, Q2, 61.3%)
18. **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%)
19. J. Cho, **S. Jung***, and Y. Kim*, Wireless Power Transfer for Variable Load, Distance, and Power Division Ratio in a Loosely-Coupled Multiple-Receiver Relay System, IEEE Transactions on Industrial Electronics, vol. 70, no. 7, pp. 6809-6818, 2023 (ISSN 0278-0046) (20230701, IF: 7.5, Q1, 93.5%)
20. S. Kim, O. A. Philip, A. Tullu, and **S. Jung***, Development and Verification of a ROS-Based Multi-DOF Flight Test System for Unmanned Aerial Vehicles, IEEE Access, vol. 11, pp. 37068-37081, 2023 (ISSN 2169-3536) (20230419, IF: 3.4, Q2, 65.4%)

[2021]

21. **S. Jung** and W. Kim*, Development of an Unmanned Aerial System for Maritime Environmental Observation, IEEE Access, vol. 9, pp. 132746-132765, 2021 (ISSN 2169-3536) (20211004, IF: 3.4, Q2, 65.4%)
22. V. Raja, S. K. Solaiappan, P. Rajendran, S. K. Madasmy, and **S. Jung***, Conceptual Design and Multi-Disciplinary Computational Investigations of Multirotor Unmanned Aerial Vehicle for Environmental Applications, MDPI Applied Sciences, vol. 11, no. 8364, pp. 1-32, 2021 (EISSN 2076-3417) (20210909, IF: 2.5, Q1, 76.0%)

[2020]

23. **S. Jung***, Special Issue on Unmanned Aerial Vehicles (UAVs), MDPI Applied Sciences, vol. 10, no. 8078, pp. 1-5, 2020 (EISSN 2076-3417) (20201114, IF: 2.5, Q1, 76.0%)
24. J. S. Jin, **S. Jung**, and H. J. Kim*, Development of Wireless Power Transmission System for Transfer Cart with Shortened Track, MDPI Applied Sciences, vol. 10, no. 4694, pp. 1-11, 2020 (EISSN 2076-3417) (20200708, IF: 2.5, Q1, 76.0%)
25. W. Kim, **S. Jung***, Y. Moon, and S. C. Mangum, Morphological Band Registration of Multispectral Cameras for Water Quality Analysis with Unmanned Aerial Vehicle, MDPI Remote Sensing, vol. 12, no. 2024, pp. 1-20, 2020 (EISSN 2072-4292) (20200624, IF: 4.2, Q1, 86.8%)
26. **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%)

[2019]

27. **S. Jung***, Development of Path Planning Tool for Unmanned System Considering Energy Consumption, MDPI Applied Sciences, vol. 9, no. 3341, pp. 1-20, 2019 (EISSN 2076-3417) (20190814, IF: 2.5, Q1, 76.0%)
28. W. Kim, S. Roh, Y. Moon, and **S. Jung***, Evaluation of Rededge-M Camera for Water Color Observation after Image Preprocessing, JKSGPC Journal of the Korean Society of Surveying, Geodesy, Photogrammetry and Cartography, vol. 37, no. 3, pp. 167-175, 2019 (ISSN 1598-4850) (20190626, Scopus)
29. **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%)
30. W. Choi and **S. Jung***, Launch Performance Degradation of the Rupture-Type Missile Canister, MDPI Applied Sciences, vol. 9, no. 1290, pp. 1-11, 2019 (EISSN 2076-3417) (20190327, IF: 2.5, Q1, 76.0%)
 31. **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%)

[2017]

32. **S. Jung*** and K. B. Ariyur, Robustness for Scalable Autonomous UAV Operations, SPRINGER International Journal of Aeronautical and Space Sciences, vol. 18, no. 4, pp. 767-779, 2019 (ISSN 2093-274X) (20171027, IF: 1.4, Q2, 58.7%)
33. **S. Jung*** and K. B. Ariyur, Automated Wireless Recharging for Small UAVs, SPRINGER International Journal of Aeronautical and Space Sciences, vol. 18, no. 3, pp. 588-600, 2017 (ISSN 2093-247X) (20170920, IF: 1.4, Q2, 58.7%)
34. **S. Jung*** and K. B. Ariyur, Compensating UAV GPS Data Accuracy Through use of Relative Positioning and GPS Data of a UGV, SPRINGER Journal of Mechanical Science and Technology, vol. 31, no. 9, pp. 4471-4480, 2017 (ISSN 1738-494X) (20170514, IF: 1.5, Q3, 37.4%)
35. **S. Jung*** and H. Jeong, Extended Kalman Filter-Based State of Charge and State of Power Estimation Algorithm for Unmanned Aerial Vehicle Li-Po Battery Pack, MDPI Energies, vol. 10, no. 9, pp. 1237-1249, 2017 (EISSN 1996-1073) (20170821, IF: 3.0, Q3, 37.1%)
36. **S. Jung*** and K. B. Ariyur, Strategic Cattle Roundup using Multiple Quadrotor UAVs, SPRINGER International Journal of Aeronautical and Space Sciences, vol. 18, no. 2, pp. 315-326, 2017 (ISSN 2093-247X) (20170524, IF: 1.4, Q2, 58.7%)

[2013]

37. **S. Jung** and K. B. Ariyur*, Enabling Operational Autonomy for UAVs with Scalability, AIAA Journal of Aerospace Information Systems, vol. 10, no. 11, pp. 516-529, 2013 (ISSN 1940-3151) (20131115, IF: 1.3, Q2, 52.9%)

PUBLICATIONS (Journal, KCI)

Accepted

[2019]

1. W. Kim, S. Roh, Y. Moon, and **S. Jung***, Evaluation of Rededge-M Camera for Water Color Observation after Image Processing, *Journal of Korean Society of Surveying, Geodesy, Photogrammetry and Cartography*, Vol. 37, No. 3, pp. 167-175, 2019 (ISSN 1598-4850) (20190626)

[2017]

2. **S. Jung***, EKF Based SOH State Estimation Algorithm for UAV Li-Po Battery Pack, *Journal of the Korea Convergence Society*, Vol. 8, No. 6, pp. 237-243, 2017 (ISSN 2233-4890) (20170628)
3. **S. Jung*** and H. Jeong, Optimal Battery Pack Design Tool for the Delivery UAV, *Journal of the Korea Convergence Society*, Vol. 8, No. 6, pp. 219-226, 2017 (ISSN 2233-4890) (20170628)
4. **S. Jung*** and H. Kim, Autolanding Mission Planning of the IT Convergence Hoverable UAV, *Journal of the Korea Convergence Society*, Vol. 8, No. 6, pp. 9-16, 2017 (ISSN 2233-4890) (20170628)
5. **S. Jung***, The Control of Spring-Mass-Damper Convergence System using H_∞ Controller and μ -Synthesis Controller, *Journal of the Korea Convergence Society*, Vol. 8, No. 5, pp. 1-11, 2017 (ISSN 2233-4890) (20170528)
6. **S. Jung***, IT Convergence UAV Swarm Control for Aerial Advertising, *Journal of the Korea Convergence Society*, Vol. 8, No. 4, pp. 183-188, 2017 (ISSN 2233-4890) (20170428)
7. **S. Jung***, System Identification of Quadrotor IT Convergence UAV using Batch and RLS Estimation Methods, *Journal of the Korea Convergence Society*, Vol. 8, No. 4, pp. 9-18, 2017 (ISSN 2233-4890) (20170428)
8. **S. Jung*** and H. Kim, Analysis of Amazon Prime Air UAV Delivery Service, *Journal of Knowledge Information Technology and Systems*, Vol. 12, No. 2, pp. 253-266, 2017 (ISSN 1975-7700) (20170407)

9. **S. Jung*** and S. Youn, The First Korean-Made IT Convergence Electric Skateboard, *Journal of the Korea Convergence Society*, Vol. 8, No. 3, pp. 31-40, 2017 (ISSN 2233-4890) (20170328)

PUBLICATIONS (Conference)

Under Work

[2026]

1. Y. Jo, G. Baek, and **S. Jung***, TBD, Paper Will Be Presented at the Asia-Pacific International Symposium on Aerospace Technology (APISAT) 2026, Japan, Oct. 2025.
2. S. Kim and **S. Jung***, TBD, Paper Will Be Presented at the 77th International Astronautical Congress (IAC), Antalya, Türkiye, Oct. 2026.
3. **S. Jung***, Development and Validation of a Power Management System for UAVs: A Sizing and Design Methodology for eVTOL Power Systems, Paper Will Be Presented at the 35th Congress of the International Council of the Aeronautical Sciences (ICAS), Sydney, Australia, Sep. 2026.
4. A. Abagero, E. Kim, and **S. Jung***, A Multi-UAV Strategy for Energy-Efficient Area Mapping in Dynamic Environments, Paper Will Be Presented at the 2026 American Control Conference (ACC), New Orleans, LA, USA, May. 2026.

Published

[2025]

5. Y. Jo, S. Kim, and **S. Jung***, Mission-Adaptive Optimization of Wing Deployment Angle for Foldable Tandem-Wing UAVs, Poster Presented at the 2024 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Gangwon, South Korea, Nov. 2025.
6. G. Baek, S. Kim, and **S. Jung***, Modeling and Validation of Nonlinear Flight Dynamics for an In-Flight Deployable Tandem-Wing UAV, Poster Presented at the 2024 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Gangwon, South Korea, Nov. 2025.
7. J. Gang, H. Myung, W. Na, S. Kim, and **S. Jung***, Simulation and Experimental Validation of UAV-UGV Cooperative Swarm for Precision Landing, Control Simplification, and Scalability Enhancement, Poster Presented at the 2024 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Gangwon, South Korea, Nov. 2025.
8. S. Kim and **S. Jung***, System-Level Optimization of Nonlinear Control for Reusable Launch Vehicles Considering Model Uncertainty under Rocket-Jet Hybrid Propulsion, Poster Presented at the 2024 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Gangwon, South Korea, Nov. 2025.
9. A. Tullu and **S. Jung***, Fuel Consumption Optimization for Hybrid Fuel-Electric Propulsion System of Small Scale Unmanned Aerial Vehicles, Presented at the Asia-Pacific International Symposium on Aerospace Technology (APISAT) 2025, Seoul, South Korea, Oct. 2025.
10. S. Kim and **S. Jung***, System-Level Optimization and Validation of a Small Suborbital Launch Vehicle with Rocket and Jet Propulsion, Presented at the 76th International Astronautical Congress (IAC), Sydney, Australia, Oct. 2025.
11. S. Kim and **S. Jung***, Simulation-Based Design Optimization and Verification for Vertical Landing of a Small Reusable High-Altitude Launch Vehicle, Paper Presented at the 2025 Society for Aerospace System Engineering (SASE) Spring Conference, Yeosu, South Korea, Apr. 2025.
12. G. Teklay, A. Tullu, and **S. Jung***, Challenges and Opportunities of Unmanned Aerial Vehicle in Polar Regions: A Review, Poster Presented at the 2025 Society for Aerospace System Engineering (SASE) Spring Conference, Yeosu, South Korea, May. 2025.
13. E. Kim and **S. Jung***, Development and Verification of the Four-layered SOC and SOH Estimation Algorithms, Paper Presented at the 2025 Society for Aerospace System Engineering (SASE) Spring Conference, Yeosu, South Korea, May. 2025.
14. G. Teklay, E. Kim, and **S. Jung***, A Study on Hydrodynamic Model and Anomaly Detection of Torpedo-shaped Autonomous Underwater Vehicle, Paper Presented at the 2025 Korean Society of Manufacturing Process Engineers (KSMPE) Spring Conference, Yeosu, South Korea, May. 2025.
15. S. Kim and **S. Jung***, Optimization of Throttle Control for Rocket Jet Complex Propulsion for Small Reusable High Altitude Launch Vehicles, Poster Presented at the 2025 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Jeju, South Korea, Apr. 2025.

[2024]

16. A. Zegeye, J. Kang, and **S. Jung***, Nonlinear Control of Unmanned Underwater Vehicle Based on Model-Based Nonlinear PID Controller with Disturbance Observer, Poster Presented at the 2024 Korean Society of Mechanical Engineers (KSME) Fall Conference, Jeju, South Korea, Nov. 2024.
17. S. Kim, W. A. Zegeye, G. T. Molla, M. Kim, E. Park, and **S. Jung***, Fuel Efficiency Analysis of the Jet Engine and Solid-Propellant Based Small Reusable Sub-Orbital Launch Vehicle Candidates, Poster Presented at the 75th International Astronautical Congress (IAC), Milan, Italy, Oct. 2024.
18. S. Kim and **S. Jung***, Deriving and Validating State Space Models for Optimal Thermal Design of Complex Environmental Sensors for High Altitude Unmanned Aerial Vehicles, Paper Presented at the 2024 Society for Aerospace System Engineering (SASE) Spring Conference, Gyeongju, South Korea, May 2024.
19. A. Zegeye and **S. Jung***, Nonlinear Control of Unmanned Surface Vehicle with Robot Arm for VTVL Rocket Recovery in Ocean Environment Based on Sliding Mode Controller, Paper Presented at the 2024 Society for Aerospace System Engineering (SASE) Spring Conference, Gyeongju, South Korea, May 2024.
20. E. Kim and **S. Jung***, Comparison and Validation of Battery State of Health (SOH) Estimation Algorithm for UAV to Improve Flight Time Estimation Accuracy, Paper Presented at the 2024 Society for Aerospace System Engineering (SASE) Spring Conference, Gyeongju, South Korea, May 2024.
21. A. Zegeye, S. Kim, and **S. Jung***, Nonlinear Control of Unmanned Surface Vehicle with Robot Arm for Securement of VTVL Rocket in Ocean Environment using Sliding Mode Controller, Paper Presented at the 2024 Korean Society of Manufacturing Process Engineers (KSMPE) Spring Conference, Gwangju, South Korea, Spr. 2024.
22. T. Molla, S. Kim, and **S. Jung***, Linear Quadratic Regulator Controllers Design for Rocket Landing using Thrust Vector Control and Reaction Gas Control Methods, Paper Presented at the 2024 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Jeju, South Korea, Apr. 2024.

[2023]

23. S. Kim and **S. Jung***, Development and Verification of the Linear State-Space Model for a Rocket Performing Wing Control Ballistic Flight, Paper Presented at the 2023 Society for Aerospace System Engineering (SASE) Fall Conference, Jeju, South Korea, Oct. 2023.
24. S. Kim and **S. Jung***, Sliding Mode Control Considering Stick-Slip Friction for Free Z-Axis Movement of the UAV Test Bench, Paper Presented at the 2023 Society for Aerospace System Engineering (SASE) Fall Conference, Jeju, South Korea, Oct. 2023.
25. A. P. Opayemi and **S. Jung***, Development and Verification of the Power Management System for a UAV: A Sizing-Design Method for PAV Power System, Paper Presented at the 2023 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Jeju, South Korea, Apr. 2023.
26. S. Kim and **S. Jung***, Validation of Nonlinear Disturbance Observer Based Attitude Controller for Rocket Based Unmanned Aerial Vehicle Using Wind Tunnel, Paper Presented at the 2023 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Jeju, South Korea, Apr. 2023.
27. **S. Jung***, MILP-based Energy Efficient and Cost Competitive Path Planning for the Swarm of Delivery UAV and UGV, Paper Presented at the 2023 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Jeju, South Korea, Apr. 2023.

[2022]

28. A. P. Opayemi and **S. Jung***, Autonomous Precision Control of a UAV in Harsh Environment: Controller Design and Simulation, Paper Presented at the 2022 Society for Aerospace System Engineering (SASE) Fall Conference, Yeosu, South Korea, Nov. 2022.
29. S. Kim and **S. Jung***, Development of a ROS-based Flight Test System for Unmanned Aerial Vehicle, Paper Presented at the 2022 Society for Aerospace System Engineering (SASE) Fall Conference, Yeosu, South Korea, Nov. 2022.
30. **S. Jung***, Development of the Battery Management System for Pixhawk Autopilot, Paper Presented at the 2022 Society for Aerospace System Engineering (SASE) Fall Conference, Yeosu, South Korea, Nov. 2022.

[2021]

31. **S. Jung***, Energy Efficient and Cost Competitive Path Planning for the Swarm of Delivery UAV and UGV, Paper Presented at the 2021 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Samcheok, South Korea, Jul. 2021.

[2020]

32. **S. Jung***, Performance Comparison among Four Hybrid Power Controllers Prototypes for a LALE Fixed Wing UAV under Various Environmental Temperature, Paper Presented at the 2020 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Samcheok, South Korea, Nov. 2020.
33. **S. Jung***, SITL Simulation of UAV and USV for 3D Ocean Environment Exploration, Paper Presented at the 2020 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Jeju, South Korea, Nov. 2020.
34. W. Kim, **S. Jung**, K. Kim, J. Ryu, and Y. Moon*, Mapping Red Tide Intensity Using a Multispectral Camera Loaded on a UAV, Paper Presented at the 2023 International Conference on Aquatic Science & Technology (i-CoAST), Busan, South Korea, Oct. 2020.
35. W. Kim, **S. Jung**, K. Kim, J. Ryu, and Y. Moon*, Mapping Red Tide Intensity Using a Multispectral Camera Loaded on Unmanned Aerial Vehicle: A Case Study in Korean South Coast, Proceedings of the 2020 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Waikoloa, HI, USA, Sep. 2020, pp. 1-4.

[2019]

36. **S. Jung**, Y. Jo, W. Kim, S. Noh, S. Go, and Y. Moon*, Development of UAS for the Ocean Environment Observation, Paper Presented at the 2019 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Samcheok, South Korea, Nov. 2019.

[2018]

37. **S. Jung**, Y. Jo, E. Kim, J. Song, and Y. Kim*, Development of the Photovoltaic Power Management System for the Small Hoverable Unmanned Aerial Vehicle, Paper Presented at the 2018 Korean Society for Aeronautical and Space Sciences (KSAS) Fall Conference, Jeju, South Korea, Nov. 2018.

[2017]

38. K. S. Oh, D. H. Shin, and **S. Jung***, Development of an Optimized Attitude Control Algorithm of Underwater Autonomous Vehicles for Path Tracking, Paper Presented at the 2017 Korean Society of Mechanical Engineers (KSME) Spring Conference, Seoul, South Korea, Apr. 2017.
39. **S. Jung*** and H. Jeong, EKF based SOH State Estimation Algorithm for UAV Li-Po Battery Pack, Paper Presented at the 2017 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Samcheok, South Korea, Apr. 2017.
40. **S. Jung*** and H. Jeong, EKF based SOC State Estimation Algorithm for UAV Li-Po Battery Pack, Paper Presented at the 2017 Korean Society for Aeronautical and Space Sciences (KSAS) Spring Conference, Samcheok, South Korea, Apr. 2017.

[2013]

41. **S. Jung**, C. Liu, and K. B. Ariyur*, Absolute Orientation and Geolocation for a UAV Using Natural Signals, Proceedings of the AIAA Infotech@Aerospace Conference (I@A), Boston, MA, USA, Aug. 2013, pp. 1-12.
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 47. **S. Jung** and K. B. Ariyur*, Scalable Autonomy for UAVs, Proceedings of the AIAA Infotech@Aerospace Conference (I@A), St. Louis, Missouri, USA, Mar. 2011, pp. 1-16.

BOOKS

1. None

PATENTS

1. **S. Jung*** and S. Kim., Apparatus for Diagnosing Degradation Based on Second Trend Analysis of Closed-Circuit Voltage and Open-Circuit Voltage (Under Review)
2. **S. Jung*** and E. Kim, System for Predicting FNN Battery State of Health Based Extended Kalman Filter (Under Review)
3. **S. Jung*** and S. Kim, Indoor vertical wind tunnel device for rocket propulsion testing (Under Review)
4. **S. Jung*** and S. Kim, Vertical wind tunnel device for rocket takeoff and landing tests (Under Review)
5. **S. Jung*** and S. Kim, Air Quality Measuring Device (Under Review)
6. **S. Jung*** and S. Kim, Unmanned Aerial Vehicle with Stepped Support Bracket, 10-2834630.
7. **S. Jung*** and S. Kim, Wind Tunnel Control Method, 10-2834630.
8. **S. Jung*** and S. Kim, Foldable Fixed-Wing Unmanned Aerial System based on Small Rocket Propulsion System, 10-2596843
9. **S. Jung*** and S. Kim, Mobile Propulsion Test Rig for Small Solid Rocket Motor with Laser Ignition Control Unit, 10-2554455
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11. **S. Jung*** and C. Chung, Hybrid Power Supply System for the Unmanned Aerial Vehicle, 10-2449646
12. **S. Jung***, Marine Environment Monitoring System, 10-2415909
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2. **S. Jung***, Jeonnam R & D project support is the 'lowest,' CMB, May 2020, https://www.youtube.com/watch?v=-WcTJ3exLI&fbclid=IwAR3BxhL54rKVLX75y6-vKjHIq_8fN084LI5WffHVz5w3bF28G-UO52XyPsg
3. **S. Jung***, Jeonnam Promotes Establishment of a After-Use Battery Recycling Center, CMB, Nov 2019, <https://www.youtube.com/watch?v=fOxzC9VE8iw&fbclid=IwAR2ikYfQGOYZbC8zv72c9TOwgmR4YNLXl0YWxGBpE5-ZLF4vTHGWVUVHYMQ>
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5. **S. Jung***, Main part of Domestic Drone Commercialized for the first time, CMB, Mar 2019, <https://www.youtube.com/watch?v=peifRUyOK9A&fbclid=IwAR2IJ0iit2ayKbtclJlvyywbjUNWUaCyqnMghos3dByDFSiD0L0Ac0e8ZyE>

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1. **S. Jung***, Unmanned System Develops Robot-Based UAV for Stratospheric Atmospheric Observation, AI Post, Apr 2025, <https://www.aipostkorea.com/news/articleView.html?idxno=7615>

2. **S. Jung***, Unmanned System Develops Small, Lightweight Multi-Sensor for Atmospheric Observation... Utilized for 30km High-Altitude Monitoring, IT Daily, May 2024,
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3. **S. Jung***, SpaceX's Falcon 9 That Soars and Lands Gracefully — Now Replicable as a Test Platform by Korean Firm 'Unmanned System', AI Post, Dec 2023,
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4. **S. Jung***, Chosun University Presents Paper on Robotic System UAV... Proposing a Stable Development Method for Aerial Vehicles, AI Times, Jun 2023,
<https://www.aitimes.com/news/articleView.html?idxno=151690>
5. **S. Jung***, "We Will Develop the Ultimate 'Drone-Type Satellite Technology'" Interview with Jung Sung-hoon, CEO of Unmanned System, Aving News, May 2023,
<https://m.post.naver.com/viewer/postView.naver?volumeNo=35870717&memberNo=11808997>
6. **S. Jung***, Unmanned System Develops Wind Tunnel Testing Equipment... Conducts TTA Certification Testing, AI Times, Mar 2023,
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8. **S. Jung***, "We Will Develop the Ultimate 'Drone-Type Satellite Technology'" – Interview with Jung Sung-hoon, CEO of Unmanned System, AI Times, Jun 2022,
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9. **S. Jung***, Introduction to the Unmanned Autonomous System Laboratory at Chosun University, The Korean Society for Noise and Vibration Engineering, Feb 2022,
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10. **S. Jung***, Bottleneck in the UAM Industry Development: Battery Pack BMS Technology, Auto Journal, Nov 2021, <https://www.dbpia.co.kr/journal/articleDetail?nodeId=NODE10622082>
11. **S. Jung***, Drone Remote Exploration Photogrammetry, Expert Review in Congressional Human Network, Oct 2018, <https://www.naon.go.kr/naon/articleList/contents.do?menuNo=2400013&storyId=242445e5-99e5-4101-9ba5-43e2d5f09316>
12. **S. Jung***, Drones, Now Float in the Sea ... The 'Power' of Marine Exploration Drone, Expert Column in Daily Korea Newspaper, Jan 2018, <https://daily.hankooki.com/news/articleView.html?idxno=544010>
13. **S. Jung***, Increased Technological Maturity Rather Than the Short-Term Performance is Necessary to Develop the Drone Industry, Expert Column in Daily Korea Newspaper, Dec 2017,
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14. **S. Jung***, Open-Source Autopilot System for Drone, Expert Column in Daily Korea Newspaper, Jun 2017,
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15. **S. Jung***, Why 'Drone Industry' Has No Choice But to Receive an Issue in the Fourth Industrial Revolution, Expert Column in Daily Korea Newspaper, Mar 2017,
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16. **S. Jung***, Desperate Need for the Customized Training for 'Drone Development and Pilot Training,' Expert Column in Daily Korea Newspaper, Dec 2016,
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<https://www.linkedin.com/pulse/desperate-need-customized-training-drone-development-pilot-jung/>

HONORS, AWARDS, AND SCHOLARSHIPS

Chosun University

- The Society for Aerospace System Engineering (Spring Conference), Best Paper Award, Jinhan Kim (President), Jun 2025
- The Korean Society of Manufacturing Process Engineers (Spring Conference), Best Paper Award, Dongkyu Ahn (President), Apr 2024
- Chosun University, 2023 Star Professor in Specialized Field, Chun-seong Kim (University President), Feb 2024

Samsung SDI

- Samsung SDI, Achievement Award, Hunsoo Kim (Head of Battery R&D Center), Nov 2015

TECHNICAL SKILLS

- MATLAB/Simulink, C, C++, Python

REFEREES

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ACADEMIC MEMBERSHIP

- IEEE (Institute of Electrical and Electronics Engineers) Member
- AIAA (American Institute of Aeronautics and Astronautics) Member

ACADEMIC PAPER REVIEWER

- Journal of Systems Architecture (IF: 4.1, Q1, 79.2%)
- IEEE Open Journal of Vehicular Technology (IF: 4.8, Q1, 76.0%)

LANGUAGE SKILLS

- Korean (Native), English (Fluently)