JAEKYUNG LEE

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EDUCATION

Kyungwoon University **Gumi, Korea**
B.S. in *Unmanned Aerial and Autonomous Vehicle Engineering* (GPA: 4.31/4.5) *Mar. 2018 – Feb. 2022*

- 2020 Start-up Honors Scholarship, Kyungwoon University
- 2020 National Science and Engineering Scholarship, Ministry of Education
- Merit-based Scholarship with Highest Honors for three semesters (2018, 2019, and 2020)
- Admission with Highest Distinction; Full-tuition Scholarship for four years

Brasshouse Language School **Birmingham, UK**
- *Language Study Abroad*, EFL Upper-Intermediate Program *Jul. 2018*

RESEARCH INTERESTS

- Control, Robotics, and Autonomous Systems (Intelligent Robot Control) / Unmanned Vehicle Control System

RESEARCH EXPERIENCE

Independent Project: Development of Launch-type Foldable Quad Copter **Gumi, Korea**
Project Leader (Advisor: Professor Ho-jun Shim) *Mar. 2021 ~*

- Created a launch-type foldable drone mechanism using mortar.

Kyungwoon University Autonomous and Intelligence Robotics Lab **Gumi, Korea**
Research Assistant (Advisor: Professor Heon-young Lim) *Sept. 2019 ~*

- Examined the development of real-time embedded system that applies ROS and depth camera sensors.
- Assisted in a drone development project for AI-based inspection and painting for Korea Electric Power Corp.
- Participated in the development of 10KW high-efficiency slot type coil motor technology for drones.
- Assisted in the development of tilt-rotor-type autonomous flight drones with coaxial vertical landing features.

AMSystem Inc. **Daejeon, Korea**
R&D company conducting national research projects such as the development of drones and Korean fighter jets.
Research Intern (Advisor: Dr. Young-ik Kim) *Jan. 2021 – Feb. 2021*

- Developed a carbon composite raspberry Pi drone, its MAVproxy control system, and its Catia V5 model.

Independent Project: Downsized PAV tri-eVTOL **Gumi, Korea**
Project Leader (Advisor: Professor Myung-rae Ham) *Sept. 2020 – Nov. 2020*

- Produced downsized tri-eVTOL and controlled a convergence tilting system using PX4.

WORK EXPERIENCE

Future Robot, Co., Ltd. **Seoul, Korea**
Intelligent service robots, manufacturing/wholesale, trade/e-commerce, software industrial robot manufacturers
Part-time Assistant *Aug. 2018*

- Introduced and managed Future Robot's AI robots to promote the 2018 Pyeongchang Winter Olympics during the Seoul Robot Festival.

TEACHING EXPERIENCE

2019 Global Korea Scholarship Program **Gumi, Korea**
Teaching Assistant, Wind Tunnel Lab (Advisor: Professor Ho-jun Shim) *Jul. 2019 – Aug. 2019*

- Assisted with running PIV (Particle Image Velocimetry) programs to test PIV flights for undergraduate students from Central Asia and ASEAN.
- Wrote the rotation code of "RC Benchmark Series 1580" program; measured motor and propeller efficiency.
- Demonstrated how to calculate the velocity of fluid flow around a rotating propeller through lab experiments.

Group and Private Tutoring **Gumi and Seoul, Korea**
Academic Tutor (Advisor: Professor Heon-Young Lim) *Feb. 2019 – Jun. 2019*
- Taught C and C++ programming languages to 30 junior students at Kyungwoon University as a group tutor.
- Tutored English, Chemistry, and Earth Science to middle and high school students in Gumi and Seoul.

LEADERSHIP EXPERIENCE

Kyungwoon University Club Grin-Narae **Gumi, Korea**
Founder and President *Mar. 2019 – Dec. 2020*
- Founded the club to study the "Development of modular drones to be used as a hobby on land, sea, and the air."
- Developed "Non-face-to-face Emergency Rescue PAVs that Keep the Golden Hour" for the 2020 Prospective Start-up Package Support Project organized by the Korea Institute of Startup & Entrepreneurship Development.
- Produced a new lightweight quadcopter applying materials for DJI Inspire 2 drone with funding provided by the Korea Expressway Corporation, after winning its selection as a Designated University Startup Club in 2020.

Field of UAV Engineering Student Council **Gumi, Korea**
Vice President *Mar. 2019 – Feb. 2020*
- Organized "Used Book Drive" activity to pass down used books and to save the environment and reduce costs.
- Offered academic review sessions to help with junior students' schoolwork and exams in their major field.

AWARDS & HONORS

- ***Hanwha Aerospace CEO Award*, the Third National University Student Capstone Contest**
  - J. Lee, H. Nar, J. Park (Nov. 2021), Poster Presentation at the Society for Aerospace System Engineering, The Third National University Student Capstone Contest, Gyeongju, Korea.
- ***Second Place*, 2021 International PAV Technology Contest**
  - Downsized Hyundai PAV eVTOL (using 12 motors) dynamics and control
- ***Participation Prize*, 2020 Kyungwoon University School Start-up Competition**
  - Team Leader: "DIY drone production kit sharing platform for drone enthusiasts"
- **2019 Rocket Launch Competition, National Universities Rocket Association (NURA)**
  - Designed a parachute system that ejects with rocket dynamic posture change using Arduino and servomotor.
- ***Third Place*, 2019 Korea IT Businesswomen's Association (IBWA) ICT Mentoring**
  - Team Leader: Developed a deep learning-based hidden camera detecting technology, app, and website.
- ***Second Place*, 2018 Korea IT Businesswomen's Association (IBWA) ICT Mentoring**
  - Developed a Solar Power Plant Panel Smart Diagnosis Technology based on Drone-ICT Convergence

CERTIFICATION & PATENT

- **J. Lee**, Future Emergency Rescue System Using PAV, Korean Patent NO. 10-2020-0090914, July 22, 2020
- *Certified Ultralight Vehicle Pilot*, Issued by Korea Transportation Safety Authority, June 2020

COMPUTER SKILLS

- Programming Languages: MATLAB, Python, C, C++
- 3D Modelling Tools: CATIA V5
- Application Development: Dormitory application, Hidden camera detector application