JACKIE LEE

805 Autumn Circle. Apt #D, College Station, Texas 77840

+1 (979) 326 7851 / jkleecontrols@gmail.com / Personal Website: https://jkleecontrols.github.io

SKILL SUMMARY

Controls Engineer with research experience in vehicle dynamics, control systems, battery management optimization and autonomous robotics. | Expert in Python, C++, Simulink, HTML, CATIA V5, UAV control, ROS, PX4

RESEARCH EXPERIENCE

Texas A&M University, Autonomous Systems Lab **College Station, Texas, US**

Research Assistant (Advisor: Dr. Sivakumar Rathinam) *Aug. 2022 – present*

Network Based Data Analysis in Intelligent Transportation Systems

- Conducted field tests and validation of control algorithms on drones and Husky robots, utilizing Simulink and ROS to enhance the performance of autonomous systems.
- Developed real-time control algorithms in C++ for autonomous vehicles systems, enhancing real-time response and stability in dynamics conditions.

Multi-Agent Path Planning and Scheduling Problem collaborated with DEVCOM Army Research Lab

- Devised a simulation using python applied by heuristic path planning algorithm made for multi-vehicles.
- Formulated battery management scheduling algorithm using Gurobi, optimizing vehicle scheduling, the number of vehicles and charging stations required for visiting over various terrains by battery constraints.

Kyungwoon University, Autonomous and Intelligence Robotics Lab **Gumi, Korea**

Independent Project: Downsized PAV tri-eVTOL

Project Leader (Advisor: Professor Myung-rae Ham) *Sept. 2020 – Nov. 2021*

- Led a multidisciplinary team to Second Place in the 2021 International PAV Technology Contest, designing and controlling a downsized Hyundai PAV eVTOL with 12 motors, which enhanced flight stability and won a $13,000 award.
- Designed tri-eVTOL with CATIA V5, incorporating dynamic characteristics into the model, and developed a control system for convergence tilting system using PX4 autopilot.

Independent Project: Development of Launch-type Foldable Quad Copter

Project Leader (Advisor: Dr. Ho-jun Shim) *Mar. 2021 – Jun. 2021*

- Created a launch-type foldable drone mortar dynamics mechanism and its control system using Pixhawk C++ and led team to achieve *Hanwha Aerospace CEO Award.*

AM System 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 hand-layered carbon composite drone, including its 3D model, and designed a Raspberry Pi drone with its control system using MAVproxy, enhancing structural dynamics and control efficiency.

EDUCATION

Texas A&M University **College Station, Texas, US**

Ph.D. in *Mechanical Engineering* *Aug. 2022 – present*

- Full-tuition Scholarship for five years

Kyungwoon University **Gumi, Korea**

B.S. in *Unmanned Aerial and Autonomous Vehicle Engineering* (GPA: 3.9/4.0) *Mar. 2018 – Feb. 2022*

- Full-tuition Scholarship for four years; National Science and Engineering Scholarship, Ministry of Education

CERTIFICATION

- *Certified Remote Pilot: Unmanned Aircraft General – Small (UAG),* Issued by Department of Transportation Federal Aviation Administration, Oct 2022
- *Certified Ultralight Vehicle Pilot***,** Issued by Korea Transportation Safety Authority, June 2020