JIYOON HWANG

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Education

M.C.S. Candidate in Computer Science August 2021 – Current
Texas A&M University, College Station, TX
M.S. in Astronomy June 2016 – Feb 2019
Yonsei University, Seoul, Republic of Korea

- Thesis: Collision-Free Control for Formation Flying of Multiple Satellites using Artificial Potential Field

B.S. in Astronomy and Physics March 2012 – August 2016
Yonsei University, Seoul, Republic of Korea
Part-time Student in Computer Science March 2020 – June 2021
Korea National Open University, Seoul, Republic of Korea

Work Experience

Research Intern October 2020 – June 2021
Korea Atomic Energy Research Institute, Nuclear Robot Division Daejeon, Republic of Korea

- Create an interface to send control commands and view KUKA iiwa robot's status using MFC and do research on the shared autonomy framework for remote operation in a hot cell testbed (C++)
- Develop security patrol mobile robot's software to be localized and navigate by fusing the data obtained from camera, lidar, and GPS by the robot, and tested with actual hardware sensors (Python, C++, ROS)

Web Developer July 2020
Jetson AI Seoul, Republic of Korea

- Create webpage to interact with map server based on OpenStreetMap API (JavaScript and HTML)

Teaching Assistant September 2016 – August 2017
Yonsei University Seoul, Republic of Korea

- Worked as a teaching assistant of Spacecraft Systems, Astrodynamics, Introduction to Astronomy courses (MATLAB)

Projects

NVIDIA Platform-based Developer Training Project May – November 2019
Hancom MDS Academy Pangyo, Republic of Korea

- Create Self-driving Restaurant Server Robot with two students and I was in charge of SLAM and collision-free navigation of the robot on ROS – Received the Prize for Excellence in Project (Demo Video Link) (ROS, C, C++)

CANYVAL-X CubeSat Mission July 2015 – June 2016
Yonsei University Seoul, Republic of Korea

- Develop an attitude determination and control system for the CANYVAL-X (CubeSat Astronomy by NASA and Yonsei using Virtual Telescope Alignment eXperiment) project which is the mission to implement flight formation of two separated CubeSats (MATLAB, C)

Skills

Languages: C/C++, Python, MATLAB, HTML
Framework/tools/OS: Robot Operation System (ROS), Linux(Ubuntu), TensorFlow, Satellite Tool Kit (STK), Git

Publications and Conference Proceedings

[1] Ryu, D., **Hwang, J.**, Han, J., Im, G., Kim, H., “Shared Autonomy Preliminary Framework for Remote Operation in a Hot cell Testbed”, in *Proceedings of the 16th Korea Robotics Society Annual Conference*, Republic of Korea, May 19, 2021.

[2] Park, J-P., Park, S-Y., Song, Y., Kim, G. N., Lee, K., Oh, J. H., Yim, J-C., Lee, E., Hwang S-H., Kim, SW., Choi, K. Y., Lee, D. S., Kwon, S. H., Kim, M-S., Yeo, S-W., Kim, T-H., Lee, S-h., Lee, K. B., Seo, S-W., Cho, W-H., Lee, J., Park, J-H., Kim, Y. W., Kang, S. J., **Hwang, J.**, Lee, S.H., Yang, J-H., Jin, S., Lee, Y., "CANYVAL-X Mission Development Using CubeSats." *Space Operations: Contributions from the Global Community*. Springer, Cham, 2017. 681–691.

Extracurricular Activities

Official Backstage Interviewer
2020 New Space Korea: Uplift, 2019 Korea Space Forum Seoul, Republic of Korea