

HOWOONG JUN

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RESEARACH INTERESTS

Multi-Agent System, Path Planning, Collision Avoidance, Reinforcement Learning, Machine Learning, Robot Motion Planning, Unmanned Aerial Vehicle, Mobile Robots

EDUCATION

Seoul National University, Republic of Korea

Mar. 2017 – Feb. 2019

M.S. in Electrical and Computer Engineering

- Thesis: Collision Avoidance by Learning Collision
- Advisor: Prof. Beom Hee Lee, *Fellow*, IEEE
- Research Focus: Robotics & Intelligent System
- GPA: 3.87/4.3 (cumulative) 3.95/4.3 (in major)

Seoul National University, Republic of Korea

Mar. 2010 – Feb. 2017

B.S. in Electrical and Computer Engineering

(Combined Minor: Engineering Biotechnology)

- Thesis: Controlling Quadrotor using Wearable Device
- Advisor: Prof. Songhwai Oh
- GPA: 3.47/4.3 (cumulative) 3.65/4.3 (in major)

RESEARCH EXPERIENCE

Graduate Student Research

Feb. 2017 – Feb. 2019

Robotics & Intelligent Systems Laboratory (RISL), Seoul National University

- Developed collision avoidance method with reinforcement learning
- Submitted at IEEE International Conference on Robotics and Automation 2019

Undergraduate Student Research

Jul. 2016 – Dec. 2016

Robot Learning Laboratory (RLL), Seoul National University

- Developed new control system for quadrotor by wearable device

IEEE Signal Processing Cup

Jan. 2015 – Feb. 2015

Music and Audio Research Group (MARG), Seoul National University

- Developed heart rate monitoring system during physical exercise using wrist-type photoplethysmographic (PPG) signals

Control Systems for Harbor Cranes

Jan. 2012 – Mar. 2014

Seoho Electric Co., Ltd

- Developed combined motion control and anti-collision system for Continuous Ship Unloader (CSU)
- Developed Auto Generated Steering System (AGSS) for Rubber Tyred Gantry Crane (RTGC)
- Developed Vision Auto Landing System (VALS) for automated yard crane

PUBLICATIONS

International Conferences

- **H. W. Jun**, H. J. Kim, and B. H. Lee, “Goal-Driven Navigation for Non-holonomic Multi-Robot System by Learning Collision” *IEEE International Conference on Robotics and Automation (ICRA)*, May 20-24, 2019.

Domestic Conferences

- **Howoong Jun** and Beom Hee Lee, “Setting a Safe Boundary for Holonomic to Non-Holonomic Conversion”, *14th Korea Robotics Society Annual Conference*, January 20-23, 2019.
- **Howoong Jun** and Beom Hee Lee, “High Dimensional Dynamic Obstacle Avoidance Method by using Low Dimensional Training Environment”, *33rd Institute of Control, Robotics and Systems Annual Conference*, May 17-19, 2018.
- **Howoong Jun**, Han Jun Kim, and Beom Hee Lee, “SLAM Compensating Method in the Vulnerable Situations by IMU Odometry”, *13th Korea Robotics Society Annual Conference*, Jan. 21-24, 2018.

WORK EXPERIENCE

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| Samsung Electronics Co., Ltd, Suwon, Republic of Korea
<i>Internship</i> | Jul. 2015 – Aug. 2015 |
| · IT & Mobile Communication Group | |
| Seoho Electric Co., Ltd, Anyang, Republic of Korea
<i>Engineer</i> | Jan. 2012 – Mar. 2014 |
| · Skilled Industrial Personnel Engineer(Alternative Military Service) | |
| SK Telecom Co., Ltd, Seongnam, Republic of Korea
<i>Manager</i> | Mar. 2019 - |
| · ICT R&D Center, New Mobility TF | |

TEACHING EXPERIENCE

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| Volunteer Instructor
<i>Seoul National University (SNU)</i> | Mar. 2017 – Jun. 2017 |
| · Tutor of “Programming Methodology”, Electrical and Computer Engineering | |
| Volunteer Instructor
<i>Korea Student Aid Foundation (KOSAF)</i> | Jan. 2012 |
| · Tutor at Naejung Middle School, Gyeonggi-do, Seong-Nam, Republic of Korea | |

HONORS, AWARDS, SCHOLARSHIPS

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| · SK Telecom AI Graduate Scholarship | Sep. 2017 – Dec. 2018 |
| · National Science and Engineering Scholarship | Mar. 2010 – Aug. 2016 |
| · Seoul National University ECE Volunteer Service Award | Jan. 2012 |

SKILLS

Computer Languages C/C++, C#, Visual Basic, MFC, Matlab, Python, ROS, PLC

Tools Tensorflow, Keras, Open CV(<https://opencvlib.weebly.com/>), Open GL