Jongwon Lee

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https://www.jongwonlee.site/

INTERESTS	Robotics, Automotive Systems, Robotic Perception

EDUCATION

University of Illinois at Urbana-Champaign (UIUC)   Aug. 2020 - Present
Ph.D. Candidate in Aerospace Engineering   Urbana, IL
- Advisor: Dr. Timothy W. Bretl

Korea Advanced Institute of Science and Technology (KAIST)   Mar. 2014 - Aug. 2020
B.S. in Mechanical Engineering, *Summa Cum Laude*   Daejeon, Korea
- Total GPA of 4.11 / 4.3 (Major GPA of 4.14 / 4.3)

HONORS AND AWARDS

Dean's List, KAIST, 2014, 2015, 2016, 2019
Outstanding Achievement Award, KAIST, 2014, 2015, 2018
Travel Grant (ACCV 2018, UR 2019, IROS 2019, CES 2020), total $11.5K, KAIST
Scholarship for Honors Students, $800, KAIST, Spring 2019
National Science and Engineering Scholarship, total $28K, Korea Student Aid Foundation, 2014-2019
Best Instructor Award, KAIST Science Outreach Program, 2018
Bronze Prize in CEE-URP Competition, KAIST, 2018

PUBLICATIONS

<u>Jongwon Lee</u> and Ayoung Kim. 2019. Neural Network-Based Long-Term Place Recognition from Omni-Images. *In Proceedings of the IEEE International Conference on Ubiquitous Robots*

RESEARCH EXPERIENCES

NAVER LABS   Feb. 2020 - Aug. 2020
Research Intern (Advisor: Dr. Donghwan Lee)   Seongnam, Korea
- Led project on holistic approaches to improve visual place recognition for urban outdoor scenario

Intelligent Robotic Autonomy and Perception Laboratory, KAIST   Mar. 2018 - Dec. 2019
Research Intern (Advisor: Dr. Ayoung Kim)   Daejeon, Korea
- Led project on depth estimation in ill-lighted conditions with near-infrared cameras
- Led project on long-term place recognition in urban environments using deep neural network
  – Earned Bronze prize in undergraduate research competition and published paper based on work
- Got funded by CEE-URP 2018 ($7.2K) and URP 2019 ($5.5K) in KAIST
- Learned programming skills and tools for robotics: ROS, TesnorFlow, Keras

Electronics and Telecommunications Research Institute (ETRI)   Jan. 2019 - Feb. 2019
Research Intern (Advisor: Dr. Wonpil Yu)   Daejeon, Korea
- Participated in project on indoor marker detection and localization using 2D LiDAR sensor
  – Marker Detection: Built up model-based object detection in point clouds
  – Localization: Estimate sensor's position through trilateration with given markers' coordinates
- Investigated back-end design of ROS packages and reasoned about various filters' suitability for processing point cloud data

Telerobotics Control Laboratory, KAIST   Jan. 2016 - Feb. 2016
Research Intern (Advisor: Dr. Dong-soo Kwon)   Daejeon, Korea
- Studied trajectory planning of 3-axis robotic arm using motors
- Learned fundamentals of C++ with Microsoft Foundation Class Library (MFC)

HIGHLIGHTED PROJECT	**Designing an Autonomous Mobile Robot** *System Developer (Advisor: Dr. Kuk-Jin Yoon)*	Mar. 2019 - Jun. 2019 Mechanical Engineering, KAIST

- Made robot for carrying out missions — exploring and picking up objects without collision
- Developed perceptual algorithm for object detection and pose estimation using RGB-D camera
- Delivered final presentation of project and demonstrated robot

TEACHING

Tutor, School of Freshman, KAIST

- CS101, Introduction to Programming — Fall 2019
- PH141, General Physics I — Spring 2015, 2016, 2019
- PH142, General Physics II — Fall 2018

Instructor, KAIST Science Outreach Program (KSOP) — Spring 2017 - Fall 2018

- Taught advanced science and mathematics to underprivileged middle school students
- Earned Best Instructor Award in December 2018

Instructor, Samsung Dream Class — Spring 2015 - Spring 2016

- Taught rudimentary mathematics to underprivileged middle school students in after-school classes

EXTRACURRICULAR ACTIVITIES AND SERVICES

Korean Augmentation to the United States Army (KATUSA) — Aug. 2016 - Apr. 2018
 Team Leader — Seoul, Korea

- Served mandatory military duty as Korean citizen at U.S. Army Camp
- Was responsible for ten to twenty people's training and performance
- Promoted cultural exchange and mutual understanding between Korean and U.S. Forces
- Learned English and taught Korean by conducting language exchange programs

Voice of KAIST — Mar. 2014 - Dec. 2015
 Journalist, Newsroom Editor-of-Chief — Daejeon, Korea

- Produced newscasts and documentaries concerning issues in KAIST
- Strived to establish news media that speaks for public opinion of school society
- Gave lectures on Adobe Premiere Pro and Photoshop to freshmen

Invitee, Qualcomm IT Tour, 2019
Civil Journalist, Korea Deposit Insurance Corporation (KDIC), 2015

TECHNICAL SKILLS

- Programming languages: Python, MATLAB, C++
- Others: ROS, Pytorch, Tensorflow, Keras

LANGUAGE PROFICIENCY

Fluent in **English** and Native in **Korean**

- New GRE: Verbal (156, 73%), Quantitative (170, 96%), Writing (3.5, 39%)
- IBT TOEFL: 105 (Reading: 30, Listening: 28, Speaking: 25, Writing: 22)
  Accumulated Best Score: 110 (Reading: 30, Listening: 28, Speaking: 25, Writing: 27)