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# Myung-Hwan Jeon

## EDUCATION

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**Korea Advanced Institute of Science and Technology (KAIST)** *Feb. 2023*

Ph.D in Robotic Program

Dissertation: "Ambiguity-Aware Multi-Object Pose Optimization toward Visually-Assisted Robot Manipulation"

Advised by Dr. Ayoung Kim and Dr. Jee-Hwan Ryu

**Korea Advanced Institute of Science and Technology (KAIST)** *Feb. 2020*

M.S. in Robotic Program

Dissertation: "Learning-Based Object Detection and 6D Pose Estimation toward Vision-Based Underwater Robotic Grasping"

Advised by Dr. Ayoung Kim

**Kwangwoon University** *Feb. 2017*

B.S. in Division of Robotics(Information Control)

## POSITIONS

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**Postdoctoral Researcher** *Jan. 2023 -*

Robust Perception and Mobile Robotics (RPM) Lab

Dept. of Mechanical Engineering (ME)

Seoul National University (SNU)

**Graduate Student Teaching Assistant** *Sep. 2023 - Dec. 2023*

SLAM101: Sensor-based Spatial Intelligence

Dept. of Mechanical Engineering (ME)

Seoul National University (SNU)

**Graduate Student Teaching Assistant** *Sep. 2022 - Dec. 2022*

AIME: Advanced Topics in Mechanical Engineering 4

Dept. of Mechanical Engineering (ME)

Seoul National University (SNU)

**Graduate Student Teaching Assistant** *Sep. 2019 - Dec. 2019*

CE554: Mechanical Design of Civil Robot

Dept. of Civil and Environmental Engineering (CEE)

Korea Advanced Institute of Science Technology (KAIST)

**Researcher** *Mar. 2017 - Jan. 2018*

The Cognitive and Collaborative Robotics Group

Center of Human-centered Interaction for Coexistence (CHIC)

## FIELD OF INTEREST

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Robot Vision, Robotic Perception, 6D Object Pose Estimation,  
Visual simultaneous localization and mapping (SLAM), 6D Localization,

## PUBLICATIONS

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### International Journal

- Hyesu Jang, Minwoo Jung, **Myung-Hwan Jeon**, and Ayoung Kim, “LodeStar: Maritime Radar Descriptor for Semi-Direct Radar Odometry”, in *IEEE Robotics and Automation Letters (RA-L)*, 2024.
- Sangwoo Jung, Hyesu Jang, Minwoo Jung, Ayoung Kim, and **Myung-Hwan Jeon**, “Imaging radar and LiDAR Image Translation for 3-DOF Extrinsic Calibration”, in *Intelligent Service Robotics (ISR)*, 2024.
- **Myung-Hwan Jeon**, Jeongyun Kim, Sangwoo Jung, Wooseong Yang, Minwoo Jung, Jaeho Shin, and Ayoung Kim, “TRansPose: Large-Scale Multispectral Dataset for Transparent Object”, in *International Journal of Robotics Research (IJRR)*, 2023.
- **Myung-Hwan Jeon**, Jeongyun Kim, Jee-Hwan Ryu, and Ayoung Kim, “Ambiguity-Aware Multi-Object Pose Optimization for Visually-Assisted Robot Manipulation”, in *IEEE Robotics and Automation Letters (RA-L)*, 2022.
- Eon-ho Lee, Byungjae Park, **Myung-Hwan Jeon**, Hyesu Jang, Ayoung Kim and Sejin Lee, “Data augmentation using image translation for underwater sonar image segmentation”, in *PLoS ONE 17(8)*, 2022.
- Joowan Kim, **Myung-Hwan Jeon**, Younggun Cho, Ayoung Kim, “Dark Synthetic Vision: Lightweight Active Vision to Navigate in the Dark”, in *IEEE Robotics and Automation Letters (RA-L)*, 2021.
- **Myung-Hwan Jeon** and Ayoung Kim, “PrimA6D: Rotational Primitive Reconstruction for Enhanced and Robust 6D Pose Estimation”, in *IEEE Robotics and Automation Letters (RA-L)*, 2020.

### International Conference

- Chaehyeon Song, Jaeho Shin, **Myung-Hwan Jeon**, Jongwoo Lim, and Ayoung Kim, “Unbiased Estimator for Distorted Conic in Camera Calibration”, in *IEEE/CVF Conference on Computer Vision and Pattern (CVPR)*, 2024.
- Dong-Guw Lee, **Myung-Hwan Jeon**, Younggun Cho, and Ayoung Kim, “Edge-guided Multi-domain RGB-to-TIR image Translation for Training Vision Tasks with Challenging Labels”, in *IEEE International Conference on Robotics and Automation (ICRA)*, 2023.
- Seungsang Yun, Minwoo Jung, Jeongyun Kim, Sangwoo Jung, Younghun Cho, **Myung-Hwan Jeon**, Giseop Kim, and Ayoung Kim, “STheReO: Stereo Thermal Dataset for Research in Odometry and Mapping”, in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2022
- Eon-Ho Lee, **Myung-Hwan Jeon**, Hyesu Jang, Byungjae Park, Ayoung Kim, and Sejin Lee, “Study on the Training Effectiveness of Deep Learning with Synthesized Underwater Sonar Image Using Pix2Pix and FCN”, in *IEEE/OES Autonomous Underwater Vehicles Symposium (AUV)*, 2020.
- Jun-Sik Kim, **Myung-Hwan Jeon**, and Jung-Min Park, “Multi-Hand Direct Manipulation of Complex Constrained Virtual Objects”, in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019.
- **Myung-Hwan Jeon**, Yeongjun Lee, Young-Sik Shin, Hyesu Jang, and Ayoung Kim, “Underwater Object Detection and Pose Estimation using Deep Learning”, in *12th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles (CAMS)*, 2019.

## Domestic Journal

- Jaeho Shin, **Myung-Hwan Jeon** and Ayoung Kim, “Infrared Visual Inertial Odometry via Gaussian Mixture Model Approximation of Thermal Image”, in Journal of Korea Robotics Society (KROS), To be appeared.
- Wooseong Yang, **Myung-Hwan Jeon** and Ayoung Kim, “Noise Removal of FMCW Scanning Radar for Single Sensor Performance Improvement in Autonomous Driving”, in Journal of Korea Robotics Society (KROS), To be appeared.
- Jeongyun Kim, **Myung-Hwan Jeon**, and Ayoung Kim, “Enhancing Single Thermal Image Depth Estimation via Multi-Channel Remapping for Thermal Images”, in Journal of Korea Robotics Society (KROS), 2022.
- **Myung-Hwan Jeon**, Yeongjun Lee, Young-Sik Shin, Hyesu Jang, Taekyeong Yeu, and Ayoung Kim, “Synthesizing Image and Automated Annotation Tool for CNN based Under Water Object Detection”, in Journal of Korea Robotics Society (KROS), 2019.

## Dissertations

- **Myung-Hwan Jeon**, Ambiguity-Aware Multi-Object Pose Optimization toward Visually-Assisted Robot Manipulation. PhD thesis, Korea Advanced Institute of Science Technology (KAIST), 2022.
- **Myung-Hwan Jeon**, Learning-Based Object Detection and 6D Pose Estimation toward Vision-Based Underwater Robotic Grasping. Master’s thesis thesis, Korea Advanced Institute of Science Technology (KAIST), 2020.

## Other Publications

- Jaeho Shin, **Myung-Hwan Jeon** and Ayoung Kim, “Infrared Visual-Inertial Odometry via Gaussian Mixture Model Approximation of Thermal Image Histogram ”, in Late-Breaking Results Poster on IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023.
- Wooseong Yang, **Myung-Hwan Jeon** and Ayoung Kim, “Azimuth-aware Noise Removal of FMCW Scanning Radar”, in Late-Breaking Results Poster on IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023.
- **Myung-Hwan Jeon** and Ayoung Kim, “Measuring Prediction Reliability on 6D Object Pose Estimation”, in Late-Breaking Results Poster on IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022.
- **Myung-Hwan Jeon**, Yeongjun Lee, Young-Sik Shin, Hyesu Jang, and Ayoung Kim, “Deep Learning Based Underwater Object Detection and Pose Estimation”, in Workshop on IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2018.

## PRESENTATIONS

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- Invited talk, Flagship Conferences in KRoC 2024, Feb., 2024.
- Spotlight talk, ICCV 2023 Workshop for Transparent & Reflective objects In the wild Challenges (TRICKY), Oct., 2023.
- Poster Presentation, IROS 2022, Oct., 2022.
- Invited talk, Hyundai Motor Company, Jul., 2023.
- Spotlight talk, IROS 2018 Underwater Workshop, Oct., 2018.

## AWARDS AND HONORS

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- **Best Paper Award**, 2023 Korea Robot Society (KROS).

- **Top Award**, 2017 Nowon-gu, Seoul Capstone Design Contest.
- **Excellence Prize**, 5th Kwangwoon Software Programming Contest.
- **Excellence Prize**, 12th Kwangwoon IT Exhibition.
- **Special Prize**, 18th Korea Intelligent Robot Contest.
- **Encouragement Prize**, 18th Korea Intelligent Robot Contest
- **Top Award**, 2015 Nowon-gu, Seoul Capstone Design Contest.
- **Top Award**, 17th Korea Intelligent Robot Contest.
- **Chairman's Award**, Texas Instrument (TI) Innovation Challenge: 2013 Korean MCU Design Contest.
- **BMW Special Prize**, 2013 Hanyang University Intelligent Model Car Racing.

## SERVEICES

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### Reviewer

- IEEE International Conference on Ubiquitous Robots (UR)
- IEEE International Conference on Intelligent Robots and Systems (IROS)
- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE Robotics and Automation Letters (RA-L)
- Intelligent Service Robotics (ISR)

## LANGUAGES & SKILLS

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- Korean, English
- C/C++, Python, MATLAB, PyTorch, TensorFlow, Solidworks
- Microsoft Office, Ubuntu, Windows, L<sup>A</sup>T<sub>E</sub>X

Revised February 28, 2024