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Kang-Won Lee

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Education

Ph.D **Dongguk University**, in Mechanical Engineering — Mar. 2021 – *Present*
(Seoul, Republic of Korea)

- *Advisor*: Prof. Soo-Chul Lim

M.S **Dongguk University**, in Mechanical Engineering — Mar. 2019 – Feb. 2021
(Seoul, Republic of Korea)

- *Advisor*: Prof. Soo-Chul Lim
- *Thesis*: Developing a Robotics Device Assessing Proprioception Position Sense under External Torque
- Cumulative GPA: 4.33/4.5

B.S **Dongguk University**, in Mechanical, Robotics, and Engineering — Mar. 2013 – Feb. 2019
(Seoul, Republic of Korea)

- Cumulative GPA: 4.0/4.5

- **University of California, San Diego**, in Electrical and Computer Engineering — Mar. 2022 – Dec. 2022
(United States of America)

- *Advisor*: Prof. Xiaolong Wang
- Visiting Graduate Student

Publications

Journal Publications

[6] **Kang-Won Lee**, Yuzhe Qin, Xiaolong Wang, Soo-Chul Lim — Oct. 2024
DexTouch: Learning to Seek and Manipulate Objects with Tactile Dexterity
IEEE Robotics and Automation Letters, vol. 9, no. 12, pp. 10772-10779, 2024.
10.1109/LRA.2024.3478571 (IF: 4.6, IF(%): 25.0)

[5] **Kang-Won Lee**, Dae-Kwan Ko, Yong-Jun Kim, Jee-Hwan Ryu, Soo-Chul Lim — Aug. 2024
Latency-Free Driving Scene Prediction for On-Road Teledriving With Future-Image-Generation
IEEE Transactions on Intelligent Transportation Systems, vol. 25, no. 11, pp. 16676-16686, 2024.
10.1109/TITS.2024.3435481 (IF: 7.9, IF(%): 2.5)

[4] Dae-Kwan Ko, **Kang-Won Lee**, Dong Han Lee, Soo-Chul Lim — Jan. 2023
Vision-based interaction force estimation for robot grip motion without tactile/force sensor
Expert Systems with Applications, vol. 211, pp. 118441, 2023.
10.1016/j.eswa.2022.118441 (IF: 7.5, IF(%): 5.2)

[3] **Kang-Won Lee**, Seung-Chan Kim, and Soo-Chul Lim — Mar. 2022
DeepTouch: Enabling Touch Interaction in Underwater Environments by Learning Touch-Induced Inertial Motions
IEEE Sensors Journal, vol. 22, no. 9, pp. 8924-8932, 2022
10.1109/JSEN.2022.3163664 (IF: 4.325, IF(%): 21.1)

[2] **Kang-Won Lee**, Sang Hoon Kang, and Soo-Chul Lim — Mar. 2022
Simple and Reliable Position Sense Assessment Under Different External Torques: Toward Developing a Post-Stroke Proprioception Evaluation Device
IEEE Transactions on Neural Systems and Rehabilitation Engineering, vol. 30, pp. 823-832, 2022
10.1109/TNSRE.2022.3161948 (IF: 3.892, IF(%): 9.6)

[1] **Kang-Won Lee**, Dae-Kwan Ko, Soo-Chul Lim — Jul. 2021
Toward Vision-Based High Sampling Interaction Force Estimation with Master Position and Orientation for Teleoperation
IEEE Robotics and Automation Letters, vol. 6, no. 4, pp. 6640-6646, 2021, and
International Conference on Intelligent Robots and Systems (IROS), 2021 **Oral Presentation**
10.1109/LRA.2021.3094848 (IF: 3.741, IF(%): 30.4)

Conference Publications

[2] Ying Yuan, Haichuan Che, Yuzhe Qin, Binghao Huang, Zhao-Heng Yin, **Kang-Won Lee**, Yi Wu, Soo-Chul Lim, Xiaolong Wang — May. 2024
Robot synesthesia: In-hand manipulation with visuotactile sensing
in IEEE International Conference on Robotics and Automation (ICRA), 2024.

[1] **Kang-Won Lee**, Xiaolong Wang — Nov. 2023
Learning Robot Object Manipulation Capabilities Using Reinforcement Learning Based on Tactile Information
in 1st Korea Haptics Conference (KHC), 2023.
Oral Presentation(Oral Paper Session 1: Haptic Actuators, Control, and Rendering)

Research Experience

Dongguk University — 2016 – Present

- Development of a High-Performance Multimodal Electronic Skin Sensor of Hybrid-Type and Intelligent module for robot manipulation (2021 - 2023)
  Sponsor: Korea Ministry of Trade, Industry and Energy
- Real-time Image Generation without Time Delay using GAN Network based on Robot Status Information and User Input during Robot Teleoperation (2020 - 2023)
  Sponsor: National Research Foundation of Korea
- Development of the artificial electronic skin that mimics human skin structure and functions for tactile and kinesthetic feedback in robotic surgery or prosthetic arm (2017 - 2019)
  Sponsor: Korea Ministry of Trade, Industry and Energy
- Development of proprioception measurement system (2017)
  Sponsor: National Rehabilitation Center of Korea

Academic Services

Journal Reviewer

- IEEE Robotics and Automation Letters (RA-L)

Conference Reviewer

- International Conference on Intelligent Robots and Systems (IROS)

Technologies

Programming: C++, C, Python, Matlab

Professional Softwares: Physical simulator(IsaacGym, IsaacLab, Mujoco), Solidworks, AutoCAD

Honors, Awards & Scholarships

Global Talent Cultivation Scholarship (Dongguk University)	2021
Magna Cum Laude (Dongguk University)	2020