

Yong Hyeok Seo

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RESEARCH EXPERIENCE

Korea Electronics Technology Institute (KETI)

- Senior Researcher, Intelligent Robotics Research Center (IRRC) Mar 2021 –
 - Conducting research on robot learning, robotic manipulation, vision-language-action models, and foundation models for robotics.
 - Participated in the following national R&D projects:
 - Development of Artificial Intelligence Guidance Tele-Operation Robot on Construction Field (2023–2026, Ministry of Trade, Industry and Energy)
 - Development of autonomous agriculture robot technology for flexible production in vertical farms (2024–2028, Ministry of Trade, Industry and Energy)
 - Development of RaaS framework technology and RaaS BM that continuously strengthens robot intelligence through human-robot shared control (2024–2028, Ministry of Trade, Industry and Energy)

Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

- Undergraduate Research Intern, in BMIPL Feb 2018 – Feb 2019
 - Project: Real-Time, Highly Accurate Robotic Grasp Detection
 - Supervisors: Prof. SeYoung Chun
 - Focus: Robotic Grasp Detection, Object Detection.

EDUCATION

Korea University, Seoul, Korea

- Ph.D. Student in the Department of Artificial Intelligence Mar 2026 – Present
 - Affiliation: Robot Intelligence Lab (RILAB)

Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

- M.S. in Electrical Engineering Mar 2019 – Feb 2021
 - Thesis: Vision based Generous Deep Neural Network Grasping Detector for Robot Grasping Task
 - Adviser: Prof. SeYoung Chun
 - Focus: Object Detection, Grasping Detection, Super-Resolution, Computer Vision
 - Cumulative GPA: 4.10 / 4.3
- B.S. in Electrical Engineering Mar 2013 – Feb 2019
 - Cumulative GPA: 3.68 / 4.3 *magna cum laude*

PUBLICATIONS

JOURNALS

- [1] YH. Seo and S-H. Kim, “Person Re-Identification With Self-Supervised Teacher for In-Box Noise,” in *IEEE Access*, vol. 13, pp. 39800–39812, May 2025.

CONFERENCES

- [1] D. M. Kim*, K. M. B. Lee*, YH. Seo*, N. Raicevic, R. B. Li, K. Long, C. S. Yoon, D. M. Kang, B. J. Lim, Y. P. Kim, N. Atanasov, T. Nguyen, S. W. Jun, and Y. W. Kim, “A Shared Autonomy System for Construction Robot Teleoperation,” in *Workshop on Construction Robots, IEEE Intl. Conf. on Robotics and Automation (ICRA)*, May 2025. **[3rd Place Award]**
- [2] A Lugmayr et al. (including YH. Seo*, S Y Chun) , “NTIRE 2020 Challenge on Real-World Image Super-Resolution: Methods and Results,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, Jun 2020.
- [3] YH. Seo*, DW. Park*, DJ. Shin, JS. Choi and SY. Chun, “A Single Multi-Task Deep Neural Network with Post-Processing for Object Detection with Reasoning and Robotic Grasp Detection,” in *Proceedings of ICRA2020*, May 2020.
- [4] DW. Park, YH. Seo and SY. Chun, “Real-Time, Highly Accurate Robotic Grasp Detection using Fully Convolutional Neural Network with Rotation Ensemble Module,” in *Proceedings of ICRA2020*, May 2020.

PATENTS

DOMESTIC PATENT

- [1] YH Seo*, SY Chun and DW Park . “캘리브레이션 장치 (Calibration Device)”. KR Patent 1021793090000, filed Jan. 29, 2019, Issued Nov. 16, 2020

- [2] YH Seo*, SY Chun and DW Park . “딥 뉴럴 네트워크 구성 방법 및 장치 (METHOD AND SYSTEM FOR CONFIGURING DEEP NEURAL NETWORK)”. KR Patent 1022885660000, filed Nov. 4, 2019, Issued Aug. 5, 2021
- [3] YH Seo*, SY Chun and DW Park . “단일 뉴럴 네트워크를 이용한 로봇 파지 방법 및 이를 수행하는 장치 (ROBOT GRASPING METHOD BASED ON SINGLE NEURAL NETWORK AND APAARATUS PERFORMEING THE SAME)”. KR Patent 1023970790000, filed Sep. 7, 2020, Issued May. 9, 2022
- [4] YH Seo*, SY Chun and DW Park . “다중 카메라의 시간 및 공간정보를 활용한 어노테이션 오류방지시스템 및 방법 (System and method for preventing annotation errors using time and spatial information of multiple cameras)”. KR Patent 1023970790000, filed Mar. 7, 2022, Issued Jul. 21, 2023
- [5] YH Seo*, SY Chun and DW Park . “EO 및 IR 영상을 활용한 학습데이터 생성시스템 및 그것을 이용한 어노테이션 오류방지방법 (System and method for producing learning data using EO and IR images and annotation error detection methods using the same)”. KR Patent 1023970790000, filed Sep 7, 2020, Issued May 9, 2022
- [6] YH Seo*, SY Chun and DW Park . “EO 및 IR 영상을 활용한 학습데이터 생성시스템 및 그것을 이용한 어노테이션 오류방지방법 (System and method for producing learning data using EO and IR images and annotation error detection methods using the same)”. KR Patent 1023970790000, filed Sep 7, 2020, Issued May 9, 2022

ACADEMIC SERVICES

REVIEWER

- Robot Conference: ICRA (2024~)
- Journal: IEEE Access (2025~), CVIU(2025~)

AWARDS & SCHOLARSHIPS

- 3rd Place Award, ICRA 2025 Workshop on Construction Robots May 2025
 - Organization: IEEE International Conference on Robotics and Automation (ICRA)
 - Awarded for: “A Shared Autonomy System for Construction Robot Teleoperation”
- National Science & Technology Scholarship 2017 – 2018
 - Organization : the Ministry of Science and ICT (MSIT, Korea)
- IITP Artificial Intelligence R&D Grand Challenge Jul 2019
 - Organization : the Ministry of Science and ICT (MSIT, Korea) & Institute for Information & Communication Technology Planning & Evaluation (IITP, Korea)
 - Award : Track 1, 5th prize

TALKS & PRESENTATIONS

- Tech Talk Series EP09–11 on Humanoid Robotics @ KETI May 2025
 - YouTube Link(EP09, EP10, EP11)

TEACHING EXPERIENCE

- Teaching Assistant, UNIST
 - Course Title : Introduction to AI Programming II Fall 2020
 - Course Title : Signals and Systems Spring 2020
 - Course Title : Probability & Introduction to Random Process Fall 2019
 - Course Title : General Physics II Fall 2018
 - Course Title : Electromagnetism I Spring 2017

MILITARY SERVICE

Republic of Korea Navy, Korea

- Sailor, discharged upon completing military service as a Petty officer 2nd class (병장) Sep 2014 – Aug 2016

LANGUAGES

- Korea: Native language.
- English: Fluent (speaking, reading, writing).
 - TOEIC score : 875

SKILLS

Pytorch, Tensorflow, Python, ROS2, MATLAB, C++, L^AT_EX

INTERESTS

Robot Learning, Robotic Manipulation, Vision-Language-Action Models, Dexterous Manipulation, Robot Vision, Foundation Models for Robotics

REFERENCES

- **Professor Sungjoon Choi**
Associate Professor, Department of Artificial Intelligence
Korea University
sungjoon-choi@korea.ac.kr
- **Professor SeYoung Chun**
Associate Professor in Electrical and Computer Engineering (ECE)
Seoul National University (SNU), Seoul, South Korea (2021 -)
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- **Dr. Sewoong Jun**
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