

JUNHYUN PARK

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EDUCATION

- Daegu Gyeongbuk Institute of Science and Technology (DGIST)** Feb 2024 – Feb 2026
M.S., Robotics & Mechatronics Engineering
Supervisor: Prof. Minho Hwang · GPA: 4.25/4.3
- Daegu Gyeongbuk Institute of Science and Technology (DGIST)** Feb 2020 – Feb 2024
B.E., Computer Science and Electrical Engineering (Double Major)
GPA: 4.07/4.3 ($\approx 3.92/4.0$) · *Summa Cum Laude*, Valedictorian

RESEARCH & PROFESSIONAL EXPERIENCE

- DEEPNOID**, AI Research Lab — Multimodal Team Feb 2026 – Present
Researcher (Alternative Military Service) · Medical foundation models for CXR, CT, and MRI: vision-language modeling (VLM), self-supervised learning (SSL), and report generation (RG).
- DGIST**, Surgical Robotics and Robot Manipulation Lab Dec 2021 – Feb 2024
Undergraduate Researcher · Supervisor: Prof. Minho Hwang
- Harvard Medical School**, Lab of Medical Imaging and Computation Jul 2023 – Aug 2023
Intern · Supervisors: Prof. Synho Do and Dr. Kyungsu Kim
- DGIST**, Image Processing Lab Apr 2021 – Dec 2021
Undergraduate Researcher · Supervisor: Prof. Kyong Hwan Jin

PUBLICATIONS

* denotes equal contribution.

Journal Publications

- SAM: Semi-Active Mechanism for Extensible Continuum Manipulator and Real-time Hysteresis Compensation Control Algorithm.**
J. Park^{*}, S. Jang^{*}, M. Park, H. Park, J. Yoon, M. Hwang.
International Journal of Medical Robotics and Computer Assisted Surgery, 2024. (IF = 2.3, Q2)
- Hysteresis Compensation of Flexible Continuum Manipulator using RGBD Sensing and Temporal Convolutional Network.**
J. Park^{*}, S. Jang^{*}, H. Park, S. Bae, M. Hwang.
IEEE Robotics and Automation Letters (RA-L), vol. 9, no. 7, 2024. (IF = 5.3, Q1)

International Conference Publications

- OFF-CLIP: Improving Normal Detection Confidence in Radiology CLIP with Simple Off-Diagonal Term Auto-Adjustment.**
J. Park^{*}, C. Moon^{*}, D. Lee, K. Kim, M. Hwang.
Medical Image Computing and Computer Assisted Intervention (MICCAI), 2025. (Acc. 30%, Early Accept — Top 9%)
- Vibration-Assisted Hysteresis Mitigation for Achieving High Compensation Efficiency.**
M. Park^{*}, C. An^{*}, **J. Park**^{*}, J. Kang, M. Hwang.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2025.
- Optimizing Base Placement of Surgical Robot: Kinematics Data-Driven Approach by Analyzing Working Pattern.**
J. Yoon^{*}, **J. Park**^{*}, H. Park, H. Lee, S. Lee, M. Hwang.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024.

4. **Integrating ChatGPT into Secure Hospital Networks: A Case Study on Improving Radiology Report Analysis.**
K. Kim*, J. Park*, S. Langarica, A. Alkhadrawi, S. Do.
Conference on Health, Inference, and Learning (CHIL), New York, Jun 2024. (Acc. 34%)
5. **Design and Kinematics Modeling of Flexible Continuum Manipulator for Endoscopic Surgery.**
S. H. Jang*, J. Park*, M. Hwang.
The 22nd International Conf. on Control, Automation and Systems (ICCAS), Nov 2022.

Preprints

1. **SSTL: Self-Sensing Tendon Loop for Hysteresis Modeling and Compensation in Tendon-Sheath Mechanisms.**
M. Park*, J. Park*, I. Ullah, C. An, M. Hwang.
arXiv preprint, arXiv:2605.16870, 2026.
2. **Markerless 6D Pose Estimation and Position-Based Visual Servoing for Endoscopic Continuum Manipulators.**
J. Park*, C. An*, M. Park, I. Ullah, S. Park, M. Hwang.
arXiv preprint, arXiv:2602.16365, 2026.

PATENTS

1. **Method for Correcting Robot Control Signal and Electronic Device Therefor.**
M. Hwang, J. Park, S. Jang, D. H. Kang, D. S. Kwon, D. S. Kim, C. S. Kim, H. Kim, T. De Sa Rosa, H. W. Baek, S. M. Seol, U. J. Yang, D. H. Lee.
WIPO (PCT) International Publication, No. WO2025143812A1, Jul 2025. Appl. No. PCT/KR2024/021174.
Assignees: DGIST & ROEN Surgical Inc. Korean national patent registration in preparation.

HONORS & AWARDS

- Talent Award of Korea, Minister of Education Dec 2025
National award to 100 outstanding young talents selected annually.
- Best Researcher Award, Dept. of RME, DGIST [*top 1%*] Jan 2025
Selected as one of only 2 graduate students across all departments.
- Excellence Poster Award, Dept. of RME, DGIST Jan 2025
- IPESK Next Generation Engineering Researcher Jan 2025
- Outstanding Paper Award [*top 2.2%*] Feb 2023
“Hysteresis Compensation of Endoscopic Flexible Continuum Manipulator using Deep Learning,” *The 18th Korea Robotics Society Annual Conference*.
- Korea Presidential Science Scholarship, President of Korea Jun 2022 – Feb 2024
- DGIST Presidential Fellowship [*top 1%*], President of DGIST Apr 2021 – Feb 2024
Awarded to only 2 students from the same school year at DGIST.
- Korean College Mathematics Competition — Silver Medal Dec 2020
Awarded by the Korean Mathematical Society.
- Dean’s List 2020–2023
Spring/Fall 2020, Spring 2021, Fall 2022, Spring/Fall 2023.

FUNDED RESEARCH PROJECTS

- **Vibration-Assisted Tendon-Sheath Friction Reduction** Aug 2025 – Feb 2026
National Research Foundation of Korea (NRF), Seed Research Program (MSIT). · Researcher.
- **Body-Ownership-Based Wearable Augmentation Robot Technology (Phase 2)** 2022 – 2026
Ministry of Science and ICT (DGIST Institutional R&D). · Researcher.
- **Intelligent Guidance System for Sleeve Gastrectomy (Bariatric Surgery)** 2023 – 2025
Korea Medical Device Development Fund (KMDF; MSIT/MOTIE/MOHW); CHA University consortium with DGIST. · Researcher.

- **Flexible Surgical Robotic Arm for Insertion along Arbitrary Retroflexed Paths** 2022
Ministry of Science and ICT (DGIST Institutional R&D); in collaboration with ROEN Surgical Inc. · Researcher.

PROJECTS

- **Exoskeleton Robot Control Using EMG Signals** Dec 2021 – Dec 2022
DGIST Undergraduate Group Research Project. Group Leader · Supervisors: Prof. Minho Hwang, Prof. Ji-Woong Choi.
- **Highly Autonomous Vehicle (Level 4)** Mar 2022 – Oct 2022
Computer Vision Developer · Supervisor: Prof. Gyengho Choi.
- **Startup: Personalized Nutrition Salad** Jun 2021 – Dec 2021
CTO · Supported by the Ministry of SMEs and Startups.
- **Design and Fabrication of a Compact Electric Vehicle** May 2020 – Nov 2020
Team Member · Supervisor: Prof. Sehoon Oh.

PROFESSIONAL SERVICES

- **Reviewer:** MICCAI (2025); IEEE RA-L, IEEE/RSJ IROS (2024).
- **Teaching Assistant:** Undergraduate Research Group Project (2025); Artificial Intelligence Basics (2024).

MEDIA & OUTREACH

- **Invited Panelist, *Conversations with Future AI Leaders* (KBS)** 2026
A televised talk show on the future of artificial intelligence, featuring the Minister of Science and ICT together with approximately 12 invited participants.

TECHNICAL SKILLS

Languages: Python, C/C++.

ML / DL Frameworks: PyTorch, HuggingFace (Transformers, Accelerate), MONAI, TensorFlow.

Methods: Deep Learning, Computer Vision, Vision-Language Models (VLM), Large Language Models (LLM), Self-Supervised Learning (SSL), Medical Image Analysis.

Robotics: ROS/ROS2, Isaac Sim, SolidWorks, Continuum Manipulators, Collaborative Robot, Tendon-Driven Control.