

# Dahyun Nam

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Department of Mechanical Engineering, Seoul National University, Seoul, South Korea

## EDUCATION

- **Seoul National University** Mar 2024 - Feb 2026 (Expected)  
GPA: 4.21/4.5  
*Master of Science in Mechanical Engineering*
- **Yonsei University** Mar 2020 - Feb 2024  
GPA: 3.41/4.5  
*Bachelor of Science in Mechanical Engineering*

## RESEARCH INTEREST

- Bio-inspired mobile robotics, Multi-modal locomotion, Compliant/reconfigurable mechanisms

## RESEARCH EXPERIENCE

- **Biorobotics Laboratory - Seoul National University** Sep 2023 - Present  
*Undergraduate, Graduate Researcher (PI : Prof. Kyujin Cho)*
  - Sub-1 kg single-actuator soft hip exosuit with differential tendon drive for bilateral hip assistance.
  - Developed CM-scale mobile robot platforms for exploration: wall-climbing drone using microspine and quasi-direct-drive jumping-driving robot.
  - Prototyped a fully foldable robotic wheel using composite manufacturing and custom electronics.
- **Soft Computing Lab - Yonsei University** Mar 2023 - Aug 2023  
*Undergraduate Researcher (PI : Prof. Sung-Bae Cho, Prof. Seok-Jun Buu)*
  - Autonomous anomaly detection robot in manufacturing using multimodal DNN.
  - In-vehicle noise classification by ProtoNet-based few-shot learning and dynamic memory replay.
- **Center for Healthcare Robotics - Korea Institute of Science and Technology(KIST)** Dec 2022 - Feb 2023  
*Research Intern at Medical Navigation Lab (PI: Prof. Deukhee Lee)*
  - Vision-based complete blood count system using image processing and deep learning.
  - Biological value estimation using optical microscope ray simulation and blood cell modeling.
- **Manufacturing and Mechatronics Lab - Yonsei University** Sep 2022 - Dec 2022  
*Undergraduate Intern (PI: Prof. Byung-Kwon Min)*
  - Feedback control system of hardware-twin robot arm by two-way remote communication.

## WORK EXPERIENCE

- **Hyundai Motors Group, Headquarters** Jul 2022 - Oct 2022  
*Intern, S Innovation Progress Team, Robotics Division*
  - Robotics technology development, startup analysis, and patent assetization at HMGICS.

## PUBLICATIONS

C=CONFERENCE, J=JOURNAL, T=THESIS

- [J.4] Seung-Hyun An, Sang-Min Baek, Dahyun Nam et al. (2025). **A Small-Scale Wheeled Robot Capable of Continuous Quasi-Direct-Drive Jumping**. *IEEE/ASME Transactions on Mechatronics* (Under Review)
- [J.3] Jinhee Lee, Dahyun Nam et al. (2025). **Vision-Ultrasound Robotic System based on Deep Learning for Gas and Arc Hazard Detection in Manufacturing**. *Engineering Applications of Artificial Intelligence* (Under Review)
- [J.2] Dahyun Nam et al. (2024). **Design and Development of an Unmanned Water Rescue Platform with Emergency Detection and Self-inflating Life Jacket Launching Mechanism**. *Trans. Korean Soc. Mech. Eng. C*
- [J.1] Robin Inho Kee, Dahyun Nam et al. (2024). **Disentangled Prototyping with Triplet-trained Prototypical Network for Few-shot Learning in In-vehicle Noise Classification**. *IEEE Access*
- [C.2] Jegyeong Ryu, Dahyun Nam et al. (2023). **Corpuscular Volume Estimation Using a Small Amount of Blood via Microscope Images**. *2023 23rd International Conference on Control, Automation and Systems (ICCAS)*
- [C.1] Dahyun Nam et al. (2023). **Dynamic Prototype-guided Memory Replay for In-Vehicle Noise Classification**. *In Conference of Korea Data Mining Society (KDMS)*

## HONORS AND AWARDS

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- **2026 Fulbright U.S.-Korea Presidential STEM Initiative Award** Scheduled for 2026  
*U.S. Fulbright Program*
- **Excellent Teaching Assistant Award** Mar 2025  
*College of Engineering, Seoul National University*
- **BK21 FOUR Scholarship** Mar 2024 & Mar 2025  
*Brain Korea 21 Program for Leading Universities and Students by the Korean government*
- **The 13th KSME Student Creative Design Competition Excellent Project Award** Sep 2023  
*The Korean Society of Mechanical Engineers (KSME)*
- **SAS Student Paper Award** Jun 2023  
*Conference of Korea Data Mining Society (KDMS)*
- **Seoul Software Academy (SeSAC) Excellent Project Award** Jun 2023  
*Seoul Business Agency*
- **Creative Design Competition Grand Prize** Jun 2023  
*Yonsei University College of Engineering*

## EXTRACURRICULAR ACTIVITIES

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- **ETH Zurich 2025 Robotics Summer School in Epeisses, Switzerland.** Jun 2025  
*Participated in the grant of ETH Robot X initiative fellowship*
  - Training on autonomous robot (state estimation, SLAM, planning, and object detection) and participated in search-and-rescue challenge.
- **Roboin, Robotics Club, Yonsei University** Jun 2021 - Jan 2024  
*Executive Staff (2021-2024), Vice President (2022), President (2023-2024)*
  - Unmanned water rescue robot, quadruped robot, Teo-jansen linkage based robot and autorace project.
  - Led robotics seminars(ROS, Embedded system, 3D printing) and cirriculums.
- **Yonsei Drone, UAV Club, Yonsei University** May 2021 - Dec 2022  
*Executive Staff (2021-2022), Vice President (2021-2022), Advisory Committee (2022)*
  - Arduino based quadcopter design, position control and face-tracking drone project.
- **Undergraduate Internship, BAE, KIM & LEE LLC.** Jul 2021  
*2021 Internship Program for Undergraduates, Labor & Employment team*
- **Student Council of the College of Engineering, Yonsei University** May 2021 - Dec 2021  
*Member of Communications Bureau and Freshman president of mechanical engineering*

## TEACHING EXPERIENCE

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- **Teaching Assistant - Creative Design Engineering [400.018]** 2024 & 2025 Fall semester  
*Seoul National University, Dept. of Mechanical Engineering, Undergraduate Course* []
  - Course materials (reference robot and its control algorithm) and technical TA sessions.
- **Vex Robotics Instructor - Beyond Coding** Jul 2024 - Nov 2024
- **RC Makerspace Arduino Instructor - Yonsei Residential College** May 2023
- **Korean Literature Instructor - Insight Education Inc.** May 2020 - May 2021
- **Science Instructor - SUN Science Inc.** Nov 2019 - May 2021

## SKILLS

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- **Programming Languages:** C, C++, Python, Arduino, ROS
- **Design Tools:** Creo, Solidworks, AutoCAD, Fusion360, Onshape, Autodesk Inventor
- **Mathematical & Simulation Tools:** MATLAB, Simulink, FEMM, Ansys Mechanical, TracePro, Isaac Sim

## CERTIFICATIONS

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- **Seoul National University, Dynamic Robot Systems Lab:** Robotics Boot Camp Certification Jun 2022
- **Yonsei University:** AI and Machine Learning Engineer Training Course Certification Dec 2021
- **Korea Transportation Safety Authority:** Qualification for Unmanned Multicopter Pilot 4th Class Dec 2021

## LANGUAGES

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- Korean : Native
- English : Fluent (Khan Academy translator(2014-2015), TOEFL iBT: 110, GRE General Test: 317)