

Hyeonhak Shin

P/C Engineer transitioning to Robot Engineer

POSCO DX

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EDUCATION

Mar. 2018 ~ Aug. 2024	Korea University of Technology and Education School of Computer Science and Engineering	Cheonan, Korea
	Thesis: Development of an AI-powered mock interview platform with Speech-to-Text (STT) capabilities	
	<i>B.S. in Computer Science and Engineering</i> GPA: 3.5 / 4.5	

RESEARCH INTERESTS

- Physical AI
- Robotics
- Spatial intelligence
- Autonomous Driving

RESEARCH EXPERIENCES

- Research Student at Smart Unmanned Vehicle Lab(S.U.V. Lab), Korea Institute of Science and Technology, Korea (Jun. 2023 ~ Aug. 2023) / Research Intern, Develop Gazebo Camera Module For UGV, EGO-Swarm Code ROS2 Porting
- Research Intern at Robot Application Research Division, Korea Atomic Energy Research Institute, Korea (Jan. 2024 ~ Jun. 2024) / Robot Web Pannel Developer, SLAM Performance Test Engineer
- P/C Engineer at Iron Steel Making DX section, POSCO DX, Korea (Aug. 2025 ~ Present) / Process Computer (P/C) System Design at Gwangyang Steelworks

AWARDS AND HONORS

- Grand Prize in the Unmanned Mobility Category at the 2023 University Creative Mobility Competition , Ministry of Land, Infrastructure and Transport of the Republic of Korea, Korea (Oct. 2023)
- Excellence Award (2nd Place) in the Embedded Robotics Track at the SAMSUNG SW AI ACADEMY FOR YOUTH, Samsung Electronics, Korea (Nov. 2024)

- Excellence Award (3rd Place) in the Samsung Electronics DA Division – SSAFY Joint Project at the SAM, Samsung Electronics, Korea (Apr. 2025)
- Excellence Award (1st Place) in the Autonomous Project at the SAMSUNG SW AI ACADEMY FOR YOUTH, Samsung Electronics, Korea (May. 2025)
- 1st Place in the Project Exhibition & Presentation Competition at the SAMSUNG SW AI ACADEMY FOR YOUT, Samsung Electronics, Korea (Jun. 2025)

ACTIVITIES

- **Autonomous Driving Research Society (K-ROAD)**
Dec 2022 – Dec 2023
Participated in the university's autonomous driving research club, developing perception and localization modules for autonomous vehicles.
- **SAMSUNG SW / AI Academy for Youth (SSAFY) 12th Embedded Robot Track**
Jul 2024 – Jun 2025
Trained in embedded systems and robotics software, focusing on AI-based robot control and real-world project implementation.

SKILLS AND TECHNIQUES

- Programming Languages: C++, Python, Java, JavaScript
- Web Technologies: HTML, CSS, Node.js, Vue3, Django, FastAPI
- Networks: ROS1, ROS2, MQTT, Socket, Wireshark, OpenVPN, WebRTC, OPC
- Robotics: Unitree Go1, ERP-42(Autonomous Driving Platform), Dobot Magician, Hiwonder Jethexa, Nanosaur
- Vision: OpenCV, PCL, 3D Lidar(Velodyne VLP-16, Cyglidar), Depth Camera(Intel realsense D435,455)
- Localization: IMU(EB-IMU, Wheeltec N100, Xsense), RTK-GPS(MRP-2000, SMC-2000)
- MicroProcessor: STM-32, Raspberry pi4, 5 , Jetson Nano, Orin, Arduino UNO
- Simulator: Gazebo, Nvidia Isaacsim, Mujoco, RoboDK, MORAI
- 3D Tools: Onshape, Solidworks

PROJECTS

- ROBOCOP (Unmanned Security Robot Control System) , Samsung SW AI Academy For Youth(SSAFY), Korea / Autonomous Driving Implementation in Simulation (Jan. 2025 ~ Feb. 2025)
- Home-based Intelligent Voice Assistant System: Distributed Voice Event Detection and AI Assistant Integration (in collaboration with Samsung Electronics' DA Division) , Digital Appliance (DA) Business, Samsung Electronics, Korea / Embedded On-Device Keyword Recognition, Establishment and operation of a Docker container environmen (Feb. 2025 ~ Apr. 2025)
- GAEMI: Disaster Area Exploration Robot, SS, Korea / Robot Developer, Robot Motion Engineering, Robot - Controller - Web Network Engineering (Apr. 2025 ~ Jun. 2025)
- Virtual PLC Data Generator within a Steelworks Environment, POSCO DX, Korea / SW Developer, Developed a Python-based Virtual PLC Data Generator using OPC Client to replay PLC log (Aug. 2025 ~ Aug. 2025)
- Construction of No.1 Electric Ark Furnace at Gwangyang Steelworks, POSCO, POSCO DX, Korea / Managed the P/C design part of the No.1 Electric Furnace Project at Gwangyang Steelworks, including (Sep. 2025 ~ Present)