

M.S. Candidate
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Sunho Kim

LinkedIn 
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GitHub 

EDUCATION

Korea Advanced Institute of Science and Technology <i>Master's Candidate in Electrical Engineering</i> <i>Research Assistant at the Intelligent Robotic Systems Lab (IRSL) under Professor Min Jun Kim.</i>	Jul 2024 - Present
Seoul National University <i>B.S. in Mechanical Engineering (Major)</i> <i>B.S. in System Semiconductor Engineering for AI (Interdisciplinary Major)</i> <i>GPA: 3.94/4.3 (cumulative), 3.8/4.3 (major), 3.98/4.3 (interdisciplinary major)</i> <i>Degree Honors: Summa Cum Laude</i>	Mar 2018 - Aug 2022
Sejong Science High School <i>High school for gifted students in mathematics and science</i> <i>Early graduation</i>	Mar 2016 - Feb 2018

HONORS AND AWARDS

Government-sponsored Scholarship <i>Korean Government</i> <i>Full tuition support for graduate studies</i>	Sep 2024 - present
Degree Honors: Summa Cum Laude <i>Seoul National University</i>	Aug 2022
Deep Learning Hardware Design Competition 2022 <i>Polaris, Korea</i> <i>2nd Place out of 111 Teams, won \$2,000 (Nationwide Competition)</i>	Feb 2022 - Jul 2022
Industrial Scholarship <i>Samsung Electronics Device Solutions</i> <i>Full tuition support for undergraduate studies</i>	Mar 2020 - Jun 2022
KCC Undergraduate Thesis Award 2022 <i>Korea Computer Congress 2022</i> <i>Participation Award</i>	Jul 2022
X-Corps Project 2020 <i>Practical Problem Research Group, Seoul National University</i> <i>Excellence Prize, won \$1,000</i>	Jul 2020 - Dec 2020
Academic Excellence Scholarship <i>Seoul National University</i> <i>Tuition support for undergraduate studies</i>	Aug 2018 - Jun 2021

WORK EXPERIENCE

Real-Time Ubiquitous Systems Lab. <i>Software Engineering Intern</i>	Jan 2022 - Sep 2022 <i>Seoul National University</i>
• Developed autonomous driving algorithms based on Autoware • Participated in data collection for digital phenotyping and mental health AI for adolescents • Conducted research on how to improve the overall response time of ROS (Robot Operating System)	

Samsung Electronics (System LSI)*Hardware Engineering Intern***Jul 2021 - Aug 2021***Hwaseong, Gyeonggi-do, Korea*

- Analyzed transformer-based deep learning model and designed accelerator hardware specialized in language processing.

Autonomous Robot Intelligence Lab.*Engineering Intern***Jan 2020 - Mar 2020***Seoul National University*

- Participated in the Autonomous Delivery Project.

Dynamic Robotics Systems Lab.*Autonomous Driving Intern***Jan 2020 - Feb 2020***Seoul National University*

- Participated in creating datasets for lane detection and traffic light detection.
- Designed path planning algorithms for vehicle parking.

PROJECT

Deep Learning Hardware Design Competition 2022**Feb 2022 - Jul 2022***AI Accelerator Design Competition for Undergraduate Students*

- Designed an adder-tree-based computational unit tailored to Tiny-YOLO v3 model that computes convolutions in parallel and the datapath to minimize the buffer usage.
- Organized presentation for special session in [IEEE AICAS 2022](#).

HMG Autonomous Driving Challenge 2021**Aug 2020 - Feb 2021***Hyundai Motor's Autonomous Driving Competition for Undergraduate/Graduate Students*

- Developed software to perform missions in CarMaker simulation.
- Participated in developing object detection (modified version of YOLO v3), tracking (Kalman Filter) using lidar and camera, and a path planning algorithm (Optimal Frenet Planning). ([GitHub](#))

K-Startup Maker Project 2020**Jul 2020 - Dec 2020***Maker Project hosted by the Korean Government (K-Startup)*

- Developed a robot software that can drive autonomously with only remote cameras without attached sensors as a team leader. \$5,000 in support.
- Participated in developing driving area detection (U-Net) and robot position detection (DOPE). ([GitHub](#))

X-Corps Project 2020**Jul 2020 - Dec 2020***Undergraduate Project hosted by Seoul National University*

- The project is on the same subject as K-Startup Maker Project 2020. \$5,000 in support.

International Student Car Competition 2020**Mar 2020 - Aug 2020***Autonomous Driving Competition for International Students*

- Developed autonomous driving software, especially in real-time parking slot detection (modified version of YOLO v3), traffic light detection (YOLO v3), and lane detection (LaneNet) algorithm. ([GitHub](#), [YouTube](#))

Autonomous Delivery Project**Jan 2020 - Mar 2020***Autonomous Delivery Project conducted by [ARI Lab](#).*

- Participated in the initial phase of the project. ([YouTube](#))

DYROS Robotics Boot Camp**Jan 2019***[DYROS Lab](#). Bootcamp for ROS (Robot Operating System) and Linux***PUBLICATION**

- Sunho Kim, Hayeon Park and Chang-Gun Lee, **Optimizing the Response Time for ROS Tasks in Multi-Core Processors**, IEEE/ACM International Symposium on Distributed Simulation and Real-Time Applications, 2023 ([IEEE Xplore](#))
- Sunho Kim, Dongmin Shin and Chang-Gun Lee, **Autoware Controller Interface for Actual Vehicle Driving**, Korea Computer Congress, 2022 (Participation Award, [Google Scholar](#))

TEACHING

ROS and Linux Introductory Educator

Mar 2020 - Jun 2020

Undergraduate Autonomous Driving Club, Seoul National University

- Conducted introductory training on ROS and Linux for new club members.

Basic Physics 2 Tutor

Nov 2019 - Dec 2019

Seoul National University

- Provided 30 hours of lecture for freshman

MILITARY SERVICE

Social Service Agent

Nov 2022 - Jul 2024

Yangcheon-gu Office, Seoul

- Working as an administrative staff member.

Korea Army Training Center

Oct 2022

Korea Army, Republic of Korea

SKILLS

Programming

Git, L^AT_EX, Matlab, Markdown, Python, C, C++, PyTorch, ROS

Hardware Design

Verilog, Bluespec, ModelSim, Vivado, Cadence Virtuoso

Communication

Korean (native), English (103/120 TOEFL)

For more detailed information, please visit my [Linkedin](#).