

# Sanghyeon Son

Undergraduate Student, Hanyang University

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EDUCATION	<b>Hanyang University - Seoul, Korea</b> <ul style="list-style-type: none"><li>B.S. in Mechanical Engineering Mar 2017 - present</li><li>Minor in Automotive-Computer Convergence</li><li>Overall GPA: <b>4.10/4.5</b></li><li>Global Exchange Student, Nanyang Technological University Jul 2018</li></ul> <b>Korea Digital Media High School - Ansan, Korea</b> <ul style="list-style-type: none"><li>High School Diploma Mar 2014 - Feb 2017</li></ul>
RESEARCH EXPERIENCE	<b>Undergraduate Research Intern</b> <ul style="list-style-type: none"><li>Applied Dynamics and Intelligent Prognosis Lab, Hanyang University Jan 2022 – Mar 2022 (Supervised by Prof. Ki-Yong Oh) Reviewed papers and reproduced object detection algorithms including YOLO in PyTorch. Worked on its application on robotics perception and sensors fusion with depth camera.</li><li>Robot Design Engineering Lab, Hanyang University Jan 2021 – Mar 2021 (Supervised by Prof. TaeWon Seo) Led design &amp; control of road adaptive robot with eccentric wheel and crank mechanism. This project was presented at 2021 Korea Robot Society Annual Conference, RED(Robot Engineering &amp; Design) show.</li></ul>
PROJECTS	<b>Graduation Project</b> <ul style="list-style-type: none"><li>4-Link Fruit Harvesting Robot using 3D Object Detection 2022 Developed 3D object detection algorithms that predicts 3D position and class. Sensors fusion were used to utilized data from depth camera. The pipeline includes 3D point cloud clustering, deep learning based 2D image detection and coordinate transformations for bounding boxes matching. The full systems were developed in ROS, C++.</li></ul> <b>Student Society Activities</b> <ul style="list-style-type: none"><li>RoadBalance - SpotMicroJetson (Quadruped Robot Development) 2020 Developed 4-legged walking robot control from python simulation. The project was produced to the educational contents including video lecture and open-source package.</li><li>Formula Student Racing 2017 Participated KSAE, student design competition 2017 as a team member. Contributed to the manufacture of formula racecar chassis and powertrain.</li></ul>
HONORS & AWARDS	<b>Excellence Award</b> – Korea Robot Society(KROS) Annual Conference RED Show 2021 <b>Merit-Based Scholarship (Dean's List)</b> - Hanyang University Spring 2021
COURSEWORKS	<b>Courses at Hanyang University (Selected)</b> <ul style="list-style-type: none"><li>Automatic Control; System Dynamics; Artificial Intelligence; Algorithms and Problem Solving; Data Structures; Linear Algebra; Engineering Mathematics(3);</li></ul> <b>Online Courses</b> <ul style="list-style-type: none"><li>Udacity - Self-Driving Car Nanodegree Program 2022 Projects including: Image geometry, Color transforms, Classification, Extended kalman filters, Particle filters, Path planning in highway driving, ROS integration.</li></ul>
SKILLS	<b>Programming Language</b> Python, C++, MATLAB, Java <b>Tools</b> PyTorch, ROS, Git
OTHERS	<b>Mandatory Military Service</b> <ul style="list-style-type: none"><li>KATUSA, IT Specialist Aug 2018 - Mar 2020</li></ul> <b>Leadership Experiences</b> <ul style="list-style-type: none"><li>President, College Photography Club (Bitdahm) Jul 2017 - Jun 2018</li></ul>