Hyungsup Park

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Skills

CAD: SolidWorks, Pspice, Eagle, Ansys, AutoCAD, Fusion 360
Hardware: 3D Printing, Arduino, Soldering, Wiring
Software: Python, MATLAB, C/C++, ROS, OpenCV, HTML/CSS

Experience

aUToronto Toronto, ON, Canada
Mechanical Member *March 2023 - May 2024*

- Modified the roof and bumper of an electrical vehicle to attach visual and audio sensors for autonomous driving
- Designed and **3D printed** prototypes using **SolidWorks** for vehicle attachments
- Held **6 hour** long weekly work sessions to manufacture finished products

NVIDIA Santa Clara, CA, USA
Hardware Engineering Intern *May 2022 – May 2023*

- Using a **shell script**, automated proper configuration of customer hardware, reducing installation time by **15%**
- Scripted a testing algorithm using **C** to validate thermal, power, and PCIe qualifications of customer hardware
- Performed hardware debugging to reproduce issues with **Root Cause Analysis**
- Conducted the installation and configuration of next-generation enterprise storage products
- Documented hardware design reviews to ensure customer designs meet NVIDIA guidelines

UTDL Design Team Toronto, ON, Canada
Mechanical Lead *October 2021 – January 2022*

- Collaborated with an interdisciplinary team of 30+ to design the gripper system of an autonomous robot
- Led a sub-team of 5 to design gripper system parts using generative modeling in **Fusion 360**
- Using **ROS**, designed a robotic mechanism for the gripper to pick up small objects
- Held weekly meetings to discuss the design requirements of the gripper system

Projects

K.I.R.B.Y. (Card Dealing Robot) | *C++, Arduino, SolidWorks, 3D Printing, Soldering*

- Automated card-dealing process by designing a semi-autonomous robot using **SolidWorks**
- Using a **finite state machine** via **Python** enabled autonomous card-dealing mechanism based on user input
- Utilizing the **Arduino Uno R4 Wifi** model, hosted a local website embedded in a **C++** script for user control

KirB (Gripper-armed Navigation Robot) | *Python, Arduino, SolidWorks, 3D Printing, Soldering*

- Using **SolidWorks**, designed and **3D printed** a gripper arm robot to pick up **2-inch** sized cube blocks
- Using **Python**, implemented obstacle avoidance and localization algorithms to autonomously navigate **30+ blocks** without interruption

Oogway (Autonomous Robot) | *ROS, C++, OpenCV*

- Mapped a **4.87** square-meter environment using **ROS gmapping libraries** and Turtlebot Kinect sensor inputs
- Autonomously navigated coordinates in sequence using **OpenCV libraries** and **C++** scripts
- Using **finite state machines**, operated the Turtlebot to react to **4** distinct environmental stimuli

Education

University of Toronto Toronto, ON, Canada
Bachelor of Applied Science in Mechanical Engineering *May 2024*
Minor in Robotics and Mechatronics
Relevant Courses: *Mechanics of Solids I, Manufacturing Engineering*
GPA: 3.77

Certificates

Certified SolidWorks Professional (CSWP) Toronto, ON, Canada
August 2021