Rae Jeong

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2nd Year Mechatronics Engineering
University of Waterloo

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Objective

My passion is in the field of Robotics and I am taking the initiative to create an open source robotic arm platform using 3D printing and the Robot Operating System.

Skills Summary

C++	ROS	Git	Arduino
Python	RViz/Gazebo	Machining	PLC
MATLAB	Ubuntu Linux	Solidworks	Raspberry Pi

Work Experience

Undergraduate Research Assistant :: Waterloo Autonomous Vehicles Lab *Sept 2015 – Current*

- Gimbal implementation and testing for drone research.
- Electromechanical design of gimbal testing and calibration apparatus.
- Writing ROS drivers and nodes for gimbals to be used for SLAM using Multi-Camera cluster.

Robotics Research and Development Engineer :: MakeLab *May 2015 – Aug 2015*

- Leading the research and development of a light weight robotic arm design and software implementation.
- Using ROS for the framework, motion planning of the arm and Arduino for PID control of the joints.
- Modular actuator and robotic arm design for a 4 DOF robotic arm with 1 kg payload and 1 meter reach.

Systems Integration Engineer :: Wilco Machine & Mold *Sept 2014 – Dec 2014*

- Design and implementation of an automated temperature control system using Unitronics PLC.
- Experience with a variety of machining tools such as a CNC mill and lathe.
- High precision part design for sealing plate and vacuum chambers using Solidworks.

Software Engineer :: Polar *Jan 2014 – April 2014*

- Small feature implementations and bug fixes using Python mainly.
- Development of an IRC bot for a more efficient development cycle.

Projects and Activities

Open Source Modular Robotic Arm Project :: Mechatronics *Affordable/Functional/Open Source*

- Open source project to create a functional and affordable robotic manipulator platform.
- Four degree of freedom, one meter reach, one kilogram payload and ROS enabled.
- Goal of $2500 BOM for anyone to build the robotic arm from anywhere.

3D Printer Design and Build :: Mechanical *Affordable/Customizable/Accurate*

- Fused deposition modeling 3D printer design and build. Inspired by the Ultimaker design.
- 3D printer model designed in Solidworks, and manufactured through 3D printing and laser cutting.

Education

University of Waterloo B.A.Sc., Mechatronics Engineering – Class of 2018 – 2B Academic Term