Luke Parna-Gile

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Technical Skills

Microsoft Suite	GitHub	C++	Robot Operating System (ROS)
3D CAD and Production Drawings	Python	C	Project organization
MATLAB/Simulink	HTML	CMake	Industrial power tools

Relevant Experience

Summer Intern – Thomson's Metal by Design 2023
- Designed and fabricated metal products for customers to fix, replace or create industrial parts or equipment
- Restructured company's file organization while assembling 3D models and production drawings on SolidWorks
- Calculated moments on structural members and machined and manufactured from production drawings

Production Associate – Honda of Canada Manufacturing 2022
- Assembled and inspected high quality automotive vehicles with great attention to detail and total accuracy in fast-paced environment
- Supported co-workers in team environment to maintain quality and efficiency of production line

Teams and Projects

System Integration Team Member – Queen's Autodrive Team 2021 to Present
- Integrating sensors using ROS2 and CAN with the goal of creating an autonomous car
- Communicating between sub teams as liaison for system integration to hardware sub team

Attitude Determination Control System (ADCS) Team Member – Queen's Engineering Satellite Team 2022
- Modeled geocentric satellite orbits using Python and C++ for the relocation of the craft for satellite imaging
- Analyzed changes communicated from the team and iterated design accordingly

System Engineer – International Engineering Def Hacks Worldwide 3.0 2021
- Developed a system for COVID safety measures by engineering and integrating electrical and mechanical components with software being awarded 1st place in COVID Innovation category
- Worked with small team through design iteration to achieve minimum viable product for presentation

Lead Mechatronics Engineer – Mechatronics and Robotics Design II Project 2023
- Developed prototype autonomous mobile robot by integrating LiDAR and IMU Sensors with Motor drivers and encoders using Raspberry Pi with ROS, expanding skills in open-ended mechatronics design
- Collaborated with group of three in a four-month time frame to produce a product for a design exhibit

Software Engineer – SDL2 C++ Game Development Project 2023
- Collaborated with a classmate to create a tile-based 2D SDL2 video game without a game engine
- Implemented input handling and collision detection while using inheritance and abstracting classes
- Designed algorithms such as land generation and infinite map scrolling

Education

Mechatronics and Robotics Engineering – Queen's University 2021 to Present
- PEO Simcoe-Muskoka Chapter Professional Engineers Scholarship, Distinction of Dean's Scholar

Key Courses
- Mechatronics and Robotics Design I: Test engineering and calibration of sensors and actuators
- Data Structures and Algorithms: Algorithm development and numerical and statistical analysis of data sets

Other Relevant Courses: Automatic Control, Sensors and Actuators, Signals and Systems, and Electronics II