Marcos Rodríguez

Available for fulltime employment
January 2021

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S K I L L S

Hardware:
FPGA (ZedBoard), oscilloscope, function generator, multimeter

Software:
SolidWorks (CSWA, certificate ID: C-4S2TFUYF3M), ROS, Gazebo, MATLAB/Simulink, PTC Creo, ANSYS Workbench, PSpice, LabVIEW, Mathcad

Programming/Mark-up:
C++, Python, Java, Verilog, MIPS, LaTeX

Languages:
English (native),
Spanish (native),
Japanese (conversational)

Machining:
Proficient with mill, lathe, band saw, power tools

Automation:
Arduino, Pneumatics

Prototyping:
Soldering, 3D printing, laser cutting

E D U C A T I O N

Northeastern University (Boston, MA)   (December 2020)
Bachelor's in Mechanical and Computer Engineering
GPA: 3.27/4.0
Relevant Coursework:

- Robotic Science and Systems (C++)
- System Analysis and Control (MATLAB)
- Embedded Design (C++, Simulink)
- Object Oriented Design (Java)
- Algorithms (C++)
- Digital Logic Design (Verilog, MIPS)
- Intro to Machine Learning (Python)
- Mobile Robotics (ROS, AWS)
- Finite Element Analysis (ANSYS)
- Thermodynamics
- Materials Science
- Dynamics and Vibrations
- Heat Transfer
- Fluid Mechanics

Honors:
Brookline Community Northeastern University Half Scholarship, Class of 1943 Engineering Scholarship, Robert and Sheila Nunley Scholarship

E X P E R I E N C E

TechShare (Tokyo, Japan) - *Engineering Co-op*   (7/19-12/19)

- Designed end effectors and attachments for Dobot Magician and Ufactory xArm for industrial and educational applications
- Designed metal electrical housings and handled outsourcing communications for production quantities of 100-500
- Presented products at IREX and other robotics exhibitions throughout Japan
- Collaborated with SDEs to develop a computer vision based robotic arm bolt picking and sorting solution for industrial applications

Amazon Robotics (N. Reading, MA) - *Hardware Eng. Co-op* (7/18-12/18)

- Assessed project feasibility with historic data, data mining, and FEA
- Completed logistical part and assembly tasks (ECO, MCO, MD) in Agile
- Updated ISO and AGMA standards with stack-ups and manufacturer data
- Devised and assembled test fixtures and automated processes with scripts
- Developed, executed, documented tests, and presented weekly results

iRobot (Bedford, MA) - *Systems Test Eng. Co-op*   (7/17-12/17)

- Designed, assembled, and modified system level product lifetime test fixtures that consisted of different sensors and controllers
- Tested at a system level with DAQs, power supplies, environment chambers
- Automated thermal test data organization and visualization with Python
- Completed iRobot extensive soldering/crimping and machine shop training courses and applied skills to fixture development
- Assisted rapid prototyping lab, consisting of HP, Stratasys, and Markforged 3D printer platforms, with maintenance and production of prototypes

A C A D E M I C / P E R S O N A L   P R O J E C T S

ROS Mobile Robotics Hospital Assistant Robots   (2020)

- With a team of 4 implemented, in ROS, a robot mapping, navigation, and guidance solution
- Designed with Turtlebot3, gmapping, AprilTags, and computer vision

Gazebo Lidar Mapping and A-star Pathfinding   (2020)

- Implemented a control algorithm in C++ to map and navigate to the goal of a map with lidar sensor data

O T H E R   E X P E R I E N C E

GPI US (Cambridge, MA) - *Coordinator*   (3/16 - Present)

- Lead discussions and encourage participation on week long English program for students from Japan