Makenzie Brian

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Education: Oregon State University

MSc Robotics
2018 – Present
Expected Graduation June, 2019

Classes: Robotic Perception, Linear Multivaribale Controls, Social Robots, and Software Development for Engineering Research
Advisor Dr. William Smart; Researching human-robot interaction

Honors B.S. Electrical Engineering
2014 – 2017
Magna Cum Laude

Classes: Electronics (I&II), Microcontroller System Design, Power Electronics, Intelligent Robots, System Dynamics and Control, and Applied Robotics

Work Experience

Graduate Research Assistant, OSU Personal Robotics Group, Corvallis, OR — January 2018 – Present

- Engineered solutions for manufacturing robotics for Precision Castparts Corp.
- Researching a study to explore patient compliance differences when instructed by telepresence robot vs. human in Ebola-style protective equipment
- Collaborated with other students to develop a potential new ROS Wiki framework through analysis of previous Wiki and documentation

Graduate Teaching Assistant, ME 451:Instrumentation and Measurements, Corvallis, OR — Winter 2018

- Taught electrical fundamentals, Arduino programming, and sensor integration to mechanical engineering students
- Coordinated and graded 38 unique group final projects for a class of 126 students
- Mentored students to assist in design development and appropriate scoping of projects

Robotics Engineering Intern, ESCO, Portland, OR — June 2017 – September 2017

- Developed inspection process for small parts looking for shrinkage defects, flashing on the parting line, and incorrect riser height
- Established a set of work instructions detailing the maintenance procedures, safety policy, normal operating protocols, and troubleshooting guide for the robot and surrounding cell
- Improved process of riser removal that was previously non-optimal due to the lack of removal of the excess material and lack of instruction given to human inspectors to operate the robot
- Communicated with human inspectors to improve parts inspection and adapt in accordance with robotic limitations

Undergraduate Research Assistant, OSU Personal Robotics Group, Corvallis, OR — September 2016 – December 2017

- Developed, built, and evaluated system for data collection to track use of a modified commercial Ride-On Car for children with developmental hindrances
- System can be used to relate frequency and duration of use with good developmental outcomes for these children
- Design information enfolded into an Honors College Thesis

Undergraduate Research Assistant, CreateIT Collaboratory, Corvallis, OR — September 2015 – September 2016

- Collaborated with other undergraduates on a variety of projects in Electrical and Computer Engineering and improved my teamwork and communication skills
- Researched and developed projects for two new design courses to encompass vital engineering and communication skills for junior year students
- Debugged system hardware for a wireless water level sensor to allow Corvallis residents to be alerted to possible flooding in the Marys Peak Watershed
- Communicated through written reports and through active participation in meetings with project team

Skills

- Computer Programming: Robot Operating System (ROS), Python, C, C++, LaTeX, Arduino, and System Verilog
- Software: Git, MATLAB, and LTSpice
- Experience with Solidworks, OpenSCAD, Eagle CAD, and Assembly

Involvement

- Robotics Graduate Student Association, Logistic Chair, June 2016 – Present
- Eta Kappa Nu - IEEE Honors Society, Webmaster, January 2016 – Present
- Society of Women Engineers, October 2014 – Present

Publications and Achievements

- Wireless Smartphone Control using Electromyography and Automated Gesture Recognition, EMBC'18
- A Critical Look at Smart Wheelchairs, IROS Workshop 2018
- Tektronix Commercialization Award, Senior Capstone, 2017