

Makenzie Brian

makenzie.brian@gmail.com • Arlington, VA
makenziebrian.com • linkedin.com/in/makenziebrian • (541) 610-7979

EDUCATION: OREGON STATE UNIVERSITY

MSc Robotics:
2018 – 2019

Classes: Robotic Perception, Linear Multivariate Control Systems, Social Robots
Master's Thesis: "Patient Compliance Effects on Simulated Ebola Medical Care Delivery with a Telepresence Robot"

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

Classes: Microcontroller System Design, Power Electronics, Intelligent Robots, System Dynamics and Control and Applied Robotics
Honor's Thesis: "Design and Implementation of a Ride-On Car with Data Tracking for Use by Young Children with Developmental Differences"

WORK EXPERIENCE

Robotics and Machine Learning Engineer, Martin Defense Group LLC, Arlington, Virginia September 2020 – Present

- Support efforts on autonomous decision making for digital twin systems

Graduate Research Assistant, OSU Personal Robotics Group, Corvallis, OR January 2018 – June 2019

- Designed test fixtures for manufacturing robots for Precision Castparts Corp.
- Studied compliance differences when patients are instructed via a telepresence robot vs. a human in protective equipment
- Helped revamp the Robot Operating System wiki framework by using site analysis of the previous documentation
- Investigated issues with current smart-wheelchair research to compose a workshop paper, which facilitated discussion on how to better aim research toward user-centered design

Graduate Teaching Assistant, ME 451: Instrumentation and Measurements, Corvallis, OR January 2018 – March 2018

- Taught electrical fundamentals, Arduino programming, and sensor integration to mechanical engineering students
- Mentored students to assist in design development and appropriate scoping of projects

Robotics Engineering for Manufacturing Intern, ESCO Group LLC, Portland, OR June 2017 – September 2017

- Developed small part inspection process that looked for shrinkage defects, parting line flashing, and incorrect riser height
- Established a set of work methodologies detailing the maintenance procedures, safety policy, normal operating protocols, and troubleshooting guide for the Fanuc robotic arm and surrounding cell
- Improved riser removal process by removing excess material and providing operating instructions for inspectors
- Communicated with expert inspectors in order to improve parts inspection and adapt in accordance with robotic limitations such as those present in dexterity and sensing at the level a human inspector would be able to perform

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

- Built and validated a data collection system that tracked the 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

SKILLS

- Computer Programming: Robot Operating System (ROS), Python, C, C++, L^AT_EX, Arduino, and System Verilog
- Software: MS Project, PyTorch, Git, MATLAB, PSpice, and LTSpice
- Experience with Project Management, Technical Writing, Scrum, Kanban, Machine Learning, Solidworks, OpenSCAD, Eagle CAD, Linux, and Assembly

ACHIEVEMENTS

- Tektronix Commercialization Award, Senior Capstone, 2017
- Grand Team Challenge for Student Scholars, Water Level Project, 2016

PUBLICATIONS

J. Dawes, M. Brian, H. Bialek, and M. L. Johnston, "Wireless smartphone control using electromyography and automated gesture recognition," vol. 2018. IEEE, Engineering in Medicine and Biology, 2018, pp. 5390–5393

B. Narin, M. Brian, and W. Smart, "A critical look at smart wheelchairs," *International Conference on Intelligent Robots and Systems (iROS)*, 2018