

# ERICA TEVERE

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## EDUCATION

### Johns Hopkins University

August 2019 – May 2021

M.S.E. Robotics – Faculty Scholarship (GPA: 3.5 / 4.0)

### University of Michigan - Ann Arbor

September 2015 – May 2019

B.S.E. Mechanical Engineering – Magna Cum Laude (GPA: 3.6 / 4.0)

## WORK EXPERIENCE

### National Institute of Standards and Technology (NIST)

August 2020 – Present

Robotics Intern – Grasping, Manipulation, and Safety of Robotic Systems Group

Gaithersburg, MD

- Researching and developing standard for grasp efficiency, testing methods to detect object slip during manipulation tasks
- Investigating and establishing environments for grasp efficiency testing in simulation using Gazebo, PyBullet, and Klampt

### FANUC America Corporation

May 2019 – August 2019

Robotics Intern – Motion Planning Group

Rochester Hills, MI

- Developed and implemented prototype system to perform dynamic path planning using Intel RealSense D435 sensor
- Performed regression testing for 8 motion options on upcoming software release to verify function and performance

### NASA Jet Propulsion Laboratory

May 2017 – December 2017

Mechanical Engineering Intern – Planetary Sample Acquisition and Handling Group

Pasadena, CA

- Designed custom parallel manipulator to simulate expected rate of compliance of a robotic arm during sample collection
- Created Python tool to automatically generate movement sequences for testbed robotic arm resulting in decrease in individual test duration by 20%, a reduced required training level of operators, and lower frequency of human error faults during testing
- Upgraded Mars 2020 testbed to characterize sampling acquisition and handling hardware during routine loading interactions and magnify anomalies in flight-like conditions before manufacturing of flight model hardware
- Calculated machining tolerances and re-designed tool to manually actuate ball locking features on sample acquisition hardware for installation into flight hardware and onto subsystem testbeds

### Fiat Chrysler Automobiles

June 2016 – September 2016

Supply Chain Intern – Powertrain Production Planning Group

Auburn Hills, MI

- Identified issues in supplier release system and spearheaded a task force consisting of 4 departments within FCA to develop and implement proposed solutions - executed inexpensive solutions resulting in a 2 month reduction in the project timeline

## RESEARCH AND PROJECT EXPERIENCE

### Johns Hopkins University Autonomous Systems, Control, and Optimization (ASCO) Lab

March 2020 – Present

Graduate Researcher Assistant – Rough-terrain Ground Vehicle Control Project

Baltimore, MD

- Integrating depth sensing onto an unmanned ground vehicle for real-world testing of robust policy search algorithm
- Investigating different deep learning methods to identify and isolate drivable surfaces for off-road/unstructured environments

### University of Michigan Autonomous Robotic Manipulation (ARM) Lab

May 2018 – December 2018

Undergraduate Researcher Assistant – Manipulation of Deformable Objects Project

Ann Arbor, MI

- Evaluated limitations of Robotiq 3-finger gripper during grasping to produce functional requirements of replacement gripper
- Designed a parallel gripper with 7 inches less of obstacle interference and 1 inch more of travel in grasping direction
- Incorporated force sensing into gripper fingertips to improve motor control when grasping deformable objects in testing

### SAE Michigan Baja Racing

September 2015 – August 2019

Team Captain, Research and Development Team ('18-'19)

Ann Arbor, MI

- Managed final design decisions, subsystem integration, & vehicle timeline resulting in record breaking 1<sup>st</sup> place season finish
- Oversaw \$100,00 budget, sponsor relations, recruitment, and community outreach of 40+ person team

Composite Subsystems Lead, Testing Colead, Suspension Mechanical Designer ('17-'18)

- Oversaw and managed 6 week on-car testing time to evaluate performance of vehicle and tune critical subsystems

Composite Subsystem Lead, Steering Mechanical Designer ('16-'17)

- Managed design and manufacturing of 10+ carbon fiber vehicle panels and rule-compliant component guards

## PUBLICATIONS

Yahnker, C., Shiraishi, L.R., ... **Tevere, E.L.** "Introduction to Tools and Techniques for Surface Sampling on Europa." *16th Biennial ASCE Aerospace Division International Conference on Engineering, Science, Construction, and Operations in Challenging Environments*, Cleveland, Ohio, April 9-12, 2018.

## SKILLS

Programming: ROS, C++, Python, MATLAB/Simulink, familiar with Orocos, familiar with OpenCV, familiar with LabVIEW

Embedded Systems/Sensors: Arduino, stereo cameras, IMU, strain gages, linear potentiometers, infrared sensors, Hall effect sensors

Software: CAD (NX, CATIA, SolidWorks), Siemens Teamcenter, FEA/Optimization (Altair HyperWorks), JMP

Manufacturing: manual and CNC mill and lathe, 3D printing, carbon fiber layups, familiar with TIG welding, familiar with GD&T