

Mario Sebasco

(786) 712 5264 - mariosebasco2017@u.northwestern.edu

Portfolio - <https://mariosebasco.github.io>

EDUCATION

Northwestern University

Evanston, IL

Master of Science in Robotics Engineering, December 2017

GPA 3.86

Relevant Courses: Optimal Control of Nonlinear Systems, Machine Learning, Advanced Mechatronics, Embedded Systems

University of Miami

Coral Gables, FL

Bachelor of Science in Mechanical Engineering, May 2016

Minor in Mathematics

GPA 3.86 – Magna Cum Laude

EXPERIENCE

HDT Global - Robotics, Evanston, Illinois

Engineering Intern

June 2017 - September 2017

- Aided in the development of a project funded by the National Robotics Initiative (NRI) that looked to use electrosense imaging as a means of manipulating an underwater robotic arm.
- Developed several C/C++ programs aimed at interacting with a microprocessor and PCB. The code ranged from low level applications such as full GPIO, ADC, mux, and PWM control, to higher level algorithms in charge of performing full voltage and current sensing cycles.
- Implemented ROS in order to interface multiple PCBs with a main user controlled computer.
- Developed skills involving: reading electrical schematics, embedded systems control with Linux, OOP, and more.

NASA Ames Research Center, Mountain View, California

Research Assistant: Multidisciplinary Aeronautics Research Team Initiative program

June 2015 – August 2015

- Served as the lead of the CFD team researching urban wind environments and their effect on low flying UAV's.
- Developed an optimization algorithm in Matlab that could numerically calculate the fastest path between two points while taking into account nearby wind velocities obtained from CFD tests.
- Aided in the incorporation of control systems dealing with wind prediction and motor failure algorithms.

PROJECTS

Impedance controlled 1 DOF Haptic Simulations

- Incorporated impedance control of a DC motor, CAD and prototyping, and a ROS interface, in order to provide a user with visual and haptic feedback of: springs, dampers, masses, walls, textures, and other possible one-dimensional virtual environments.

Path Tracking Robot

- Built from scratch small autonomous robotic car capable of traversing its way through a given track. Skills involved include microcontrollers and mechatronics, Android programming, Computer vision, and CAD.

Human-Robot Haptic Interface

- Developed an electromechanical system that allows a user control over an array of mechanical rat whiskers, and accurately and intuitively relate sensory information back in the form of haptic feedback. The project incorporated embedded systems, CAD, and C programming.

Mechanical Wheelchair Lift

- Designed and built system that would allow a disabled person to traverse a set of stairs without aid from another individual. The project incorporated CAD, stress analysis, and machining.

SKILLS

Computer Applications: Git, ROS, Matlab, Python, C/C++, Mathematica, SolidWorks, Linux/Mac/Windows OS, ANSYS, CFD

ACTIVITIES/HONORS

- Scholarship recipient of the Great Minds in STEM program (2016), featuring a sponsorship from Boeing.
- Member of Students for the Exploration and Development of Space (SEDS). Helped found the club at the University of Miami. Participated and competed in the NASA Robotic Mining competition.
- Member of Engineers without Borders (EWB). Helped kick-start a new project that looked into rehabilitating a school in the city of San Jose, Panama.