JOAQUIN GIRALDO-LAGUNA

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Education

Massachusetts Institute of Technology — Cambridge, MA
Candidate for Bachelor of Science in Mechanical Engineering — May 2020
Courses: Product Engineering Process, Numerical Computation, Mechanical System Electronics, Design for Robotic Assembly, Underactuated Robotics, Measurement and Instrumentation
GPA: 4.3/5.0

Work Experience

Amazon Robotics — North Reading, MA
Advanced Robotics Intern — May 2019–August 2019
- Simulated compliant materials in Drake, a C++ rigid-body based simulation toolbox.
- Automated an STL model pipeline for compliant structure simulations.

Righthand Robotics — Somerville, MA
Hardware Intern — January 2019–May 2019
- Designed a test fixture in SolidWorks to test five new version grippers synchronously.
- Wrote a testing suite program for a Raspberry Pi based touchscreen controller for grading and logging test data from new grippers, without a computer.

3M Robotics Laboratory — Maplewood, MN
Research & Development Intern — May 2018–August 2018
- Built upon a Robotics Operating System development platform to create a uniform testing system for a force-compliant end effector to be used across 3M's quality and testing divisions.
- Prototyped a replacement system for abrasive pads on industrial robotic arms at all 3M plants.

Research Experience

Distributed Robotics Laboratory – CSAIL — Cambridge, MA
Researcher — October 2019–Present
- Remodeled soft robotic origami gripper for optimized fabrication time and elasticity.
- Evaluated modular behaviors for configurations of custom auxetic volumetric actuators.

Tangible Media Group – MIT Media Lab — Cambridge, MA
Researcher — August 2018–December 2018
- Developed a tangible user interaction platform using modular haptic controller prototypes.

Laboratoire PIMM – Arts et Métiers — Paris, France
Researcher — May 2017–July 2017
- Wrote signal processing code for structural health monitoring using a piezoelectric matrix.
- Translated fault detection programs for deployment on a single-board embedded computer.

Digital Structures Group – MIT Building Technology Laboratory — Cambridge, MA
Researcher — January 2017–May 2018
- Optimized designs for 3d printing and milling beams using Rhino and Grasshopper software.

MIT d'Arbeloff Laboratory — Cambridge, MA
Researcher — September 2016–December 2016
- Coordinated live orientation sensor data to balance a human mounted robotic arm in Python.

Leadership Experience

Society of Hispanic Professional Engineers (SHPE) — Cambridge, MA
Philanthropy Chair, Regional Representative — September 2016–May 2019
- Established Noche de Ciencias, where dozens of families visit MIT to see 50+ STEM demos.
- Planned the Boston Sub-Regional Summit, uniting all Northeast SHPE chapters.

MIT Undergraduate Association (UA) — Cambridge, MA
Community Service Co-Chair, MIT 2020 Class Council — May 2017–May 2018
- Bridged connections between local community service organizations and MIT student groups.
- Advocated for entire class to change decisions made by MIT administration.

Activities & Awards

Gordon Engineering Leadership Program — Cambridge, MA
Participated in and helped change leadership programming for 100 yearly students. — May 2019

Hispanic Scholarship Fund — Los Angeles, CA
Attended two conferences for the top 100 HSF scholars in a pool of 10,000. — April 2015

Skills

Software: Adobe CC, Python, C++, Git, MATLAB, Linux, Arduino, SolidWorks, Rhino, Grasshopper, ROS, Processing, HTML, CSS, JavaScript, Bootstrap, Drake

Hardware: Epsilon, Shopbot. Arduino, Teensy, KUKA, URobot, OMAX, Raspberry Pi, BeagleBone