Mateo Guaman Castro

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mateoguaman.github.io

Education

Tufts University, Medford, MA
Bachelor of Science in Electrical Engineering, expected May 2020
Minor in Computer Science
GPA: 3.73, Dean's List 2 semesters

Unidad Educativa Julio Verne, Quito, Ecuador
Class of 2016
Valedictorian

Relevant Courses

Data Structures, Introduction to Computer Science (C++), Introduction to Computing in Engineering (MATLAB) Introduction to Electrical Systems, Linear Algebra, Calculus 1 - 3, General Physics 1, General Physics 2, Applications in Engineering: Simple Robotics

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Skills

Programming Languages: C++, Python, HTML, MATLAB, LabVIEW
Products and packages: ROS, Raspberry Pi, Arduino, LEGO MINDSTORMS
Software: Adobe Illustrator, Lightroom, Premiere Pro, InDesign, Microsoft Office
Language: Spanish (native)

Experience

Center for Engineering Education and Outreach, Tufts University, Summer Internship, June-August 2017
- Built a local network of IoT devices, including an Arduino-based IoT sign for Prof. Ethan Danahy's Lab, to develop and showcase the IoT educational capabilities of the LEGO MINDSTORMS EV3.
- Developed examples of a Raspberry Pi controlling the above-mentioned sign and Philips Hue lightbulbs over the internet.
- Developed a public Python package to handle IoT HTTP requests
- Mentored a workshop for 38 Japanese High School students on client based product development.

CRISP Lab, Tufts University, Research Assistant, June-August 2017
- Designed and built a land robot from scratch to be used on research in obstacle avoidance with computer vision, control systems of the robot and real time communication with a drone.
- Controlled from a Raspberry Pi that communicates through ROS to an Arduino that controls the sensors and movement of the robot.
- Communicated data from ultrasonic sensors, IMU, infrared sensors, and servo and DC motors.
- Programmed in C++

Projects

Word indexer and finder similar to GNU grep, 2017
- Final Data Structures Project
- Indexed 2459 files in 10948 directories taken from Project Gutenberg in under a minute.
- Programmed in C++ implementing tries, vectors, and sets.

Best-project voting program, 2015
- Developed a voting program in Python with a Tkinter GUI for high school's entrepreneurship fair to make voting more reliable and efficient