Sidney M. Velado

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EDUCATION

Carnegie Mellon University, Pittsburgh PA
Bachelor of Science in Mechanical Engineering
Expected Graduation: May 2020

EXPERIENCE

Donnelly Lab – University of Pittsburgh School of Medicine, Pittsburgh PA: Oct 2019 – Present
Mechatronics Engineer – Part Time

- Designed and produced different mechatronic systems used in different neurobiological experiments
- Developed a controllable LED array system with a graphical user interface used in experiments to stimulate protein clumping in cells
- Manufactured a custom designed heat sink to cool high power electrical components in an industrial incubator

Staples – Framingham MA: May - Aug 2019
Robotics Engineer Intern

- Modeled and designed an autonomous ground robot
- Developed different controllers for semi-autonomous vehicle with assistive maneuvering
- Researched multiple robotic components and systems and wrote reports for company documentation
- Programmed ROS packages in C++ and Python for different sensors and motors

Computational Engineering and Robotics Laboratory – Carnegie Mellon University, Pittsburgh PA: May - Aug 2019
Student Researcher Lead

- Developed an autonomous robotic system for inspection and cleaning bio foul off large ship hulls
- Led a team of undergraduate students and managed project development
- Designed and maintained a ROS package with Python, C++, and Arduino code for robot controls

Robotics Institute Biorobotics Laboratory – Carnegie Mellon University, Pittsburgh PA: 2018 - Present
Student Researcher

- Redesigned and manufactured a flywheel actuated biped for efficient locomotion over varying terrain
- Machined, 3D printed, and laser cut designed components and integrated them into robotic systems
- Programmed an energy-based controller PID controller for the flywheel actuation

PROJECTS

Non – Repeating Path Planner, Planning Techniques for Robotics Final Project

- Implemented a multigoal weighted A* path planner that for exploration-based tasks
- Created an RViz visualization for the path planner
- Fully packaged and interfaced planner for easy integration with any robot

LEADERSHIP AND EXTRACURRICULARS

Internal Outreach Chair, Spanish and Latin Student Association – Fall 2018

- Recruited incoming students to the organization and improved membership by 30%
- Organized forums for students to be able discuss the LatinX experience at Carnegie Mellon

Social Chair, Phi Delta Theta Fraternity – Fall 2016

- Led a 12-member committee to organize and plan all social functions
- Managed a $14,000 budget
- Planned a formal dinner for 150 people at popular Pittsburgh venues

Vice President, CMU Club Lacrosse – Fall 2016
General Body Member, Society of Hispanic Professional Engineers – Fall 2015

SKILLS

Programming: ROS, C++, MATLAB, Python, C, Linux Environment, Arduino Dev, Simulation, Git
Engineering: Rapid prototyping, Machine Shop, SolidWorks, 3D Printing, FEA Simulation, Microcontrollers
Spoken Languages: Fluent in Spanish; Conversant in French