

Marco Morales

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Education

Northwestern University

Expected Graduation: Winter 2022

Master of Science in Robotics

GPA 4.0

University of Illinois at Chicago (UIC)

Graduated: May 2021

Bachelor of Science in Mechanical Engineering

GPA 3.88

Skills

Technical: C++, Python, C, MATLAB, Robot Operating System (ROS), Gazebo, SOLIDWORKS, Simulink, ANSYS, CoppeliaSim, Gazebo, MoveIt!

Experience

Argonne National Laboratory, Intern

June 2021– Currently

- Developing an autonomous system involving two robotic arms and a movable base to be used in a radioactive environment.
- Creating CAD models to be used in Gazebo to simulate the lab the autonomous system will work in.
- Creating a model of the system in Gazebo to be controlled with MoveIt in a simulated environment.

Robotics Lab and Motion Lab, UIC

August 2020-May 2021

- Learning and applying CoppeliaSim software to simulate objects with a current emphasis on simulating the Kinova Gen3 Lite Robot.

Rehabilitation Robots, UIC

May 2019–March 2020

- A team member on the redesign of an ankle-foot orthosis and goal was to make it more compact, allow different sizes of feet to be tested and make it more comfortable.
- Worked on the development of the ankle foot prosthesis and worked with applying strain gauges as well as the wiring.
- Created an elevated boot to accompany the ankle foot prosthesis due to the elevation caused on the leg wearing the prosthesis.

Launch-UAS, Iowa State University

May 2019-August

2019

- Used sensors related to aircraft such as airspeed, temperature, pressure, altitude and vehicle orientation to verify functionality.
- Learned how to use ROS to program nodes that run the sensors during hardware-in-the-loop (HiTL) on a test fixed-wing aircraft to simulate real testing environments.

Projects

Senior Design, Robotic Arm

October 2020-May 2021

- Participating in creating an autonomous system for radioactive environments sponsored by a Fermilab National Accelerator Laboratory's Katsuya Yonehara.
- Gaining professional experience with designing an autonomous system, cost analysis and team collaboration.
- Created CAD drawing of the robotic arm with an Intel Realsense Camera.

RoboKeeper

November 2021-December 2021

- Programmed a HDT Adroit to be a goalkeeping robot in a collaborative setting.
- Create the computer vision pipeline to detect the ball it has to block.
- Created CAD drawing of the robotic arm with an Intel Realsense Camera.