

EDUCATION

University of Michigan - Ann Arbor, USA

August 2023-May 2025

M.S. in Robotics

Coursework: Introduction to Manipulation, Math for Robotics, Robotics Systems Laboratory, Deep Learning/Robot Perception (currently enrolled), Robot Kinematics and Dynamics (currently enrolled).

Research: Currently working on bridging simulation to real contact manipulation for a Soft-bubble tactile sensor.

GPA: 4.0

Pontificia Universidad Católica de Chile - Santiago, Chile

March 2013-Jan 2020

B.S. in Engineering, Major Autonomous Systems and Robotics, minor in Industrial Engineering

Approved with distinction, GPA: 5.31/7.0 (A)

Coursework: Fundamentals of Robotics, Design of Robotic Systems, Sensors and Actuators for Robotics, Advanced Computer Programming, Fundamentals of Image Processing, Electronics, Programmable Electronic Systems.

University of Texas at Austin - Austin, USA

Aug-Dec 2016

Exchange Program

WORK EXPERIENCE

Oddness Technologies - Santiago, Chile

Jan 2021-July 2023

Hardware and Software Developer

- Developed the first prototype of the “picker robot”, an autonomous mobile robot (AMR) with a five degrees-of-freedom arm, that aimed to fulfill a customer's grocery list.
- Led the hardware development of a RFID sensor tower attached to an AMR for a mining warehouse inventory management solution. This robot is working in the client's warehouse, providing a true measure of each item in the warehouse and its position.
- Led the hardware development of a new indoor autonomous mobile robot for the company, with the goal of being a versatile mobile base to offer to our clients. In charge of the electronics, mechanical design, and firmware of the robot.
- Part of the team that started the company.

CoMPAS Lab - Santiago, Chile

Mar 2019-Jan 2021

Research Engineer

- Developed an early Harmful algal bloom (HAB) alert system. Designed and manufactured a budget flow microscope for phytoplankton analysis in order to mitigate the losses in the salmon industry.
- Supervised three different undergraduate research projects. Guided the students to help them materialize the projects given by my supervisor.
- Implemented a data logger for the JUNO particle physics experiment. Measured temperature, pressure, and images of the system to validate an instrumentation capsule.

Monterey Bay Aquarium Research Institute (MBARI) - Monterey, USA

Jun 2020-Aug 2020

Seafloor Mapping Lab Intern

- Developed a stereo camera calibration software for 3D reconstruction and 2D mosaic generation of a seafloor survey. The calibrations improved substantially the results of 2D mosaics generation from previous years surveys.
- Wrote the driver's code that controlled both cameras to capture each frame simultaneously.
- Participated in two virtual seafloor surveys after the internship where a remotely operated vehicle (ROV) was used to scan seafloor at depths around 3,000 meters. Gave support to the operation of the new drivers that were developed during the internship.
- Actively part of the interns community. Helped in the design of the internship t-shirts and the creation of the tech-fest videos.

SKILLS

- Languages: Spanish, English.
- Programming: Python, C/C++, Linux.
- Frameworks: Numpy, OpenCV, Pytorch.
- CAD/EDA: Inventor, Fusion 360, Eagle.
- Microcontrollers: TI MSP430, Atmel AtMega328, Arduinos.
- FPGA: Verilog.
- Manufacturing: 3D printing, Laser cut, Sheet metal, PCB assembly (SMT & THM).