

Alfonso Fernández
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7525 Karlov Avenue
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SKILLS

Mechatronics and Computers

Electronics Design, including Microcontroller Programming, PID motor control, ROS, and terminal coding
CAD (Solidworks, NX, AutoCAD)
C++, C, Java, Python, MATLAB, Mathematica, and Microsoft Office
OpenCV and Computer Vision

Mathematical Analysis and Simulation

Proficient in Statistical data analysis and capable of writing discrete mechanics algorithms

Robotics

Actuator and Sensor Design
Soft Robotic Actuators
Artificial Intelligence & Machine Learning

Mechanical Design

Creative Problem solving
Traditional manufacturing methods, such as milling, turning, casting, sheet metalworking, and injection molding
Advanced manufacturing methods, such as CNC Machining and 3D printing

Language and Communication

Fluent in English and Spanish
Conversant in French and Italian
Excellent communication and writing skills

Leadership

President and Founder of Slavic Literature Club
Founder and Coach of NRP Robotics Club
Counselor at YSI Leadership Camp
TA for Mechatronics, Robotic Manipulation and Python Programming
Advisor for Tau Beta Pi Illinois Gamma Chapter

WORK EXPERIENCE

Northwestern University, Evanston, Illinois

Research Aide (2015-2017), Graduate Researcher (2017-Present): Center for Robotics and Biosystems

2015-Present

Obtained an REU Grant for Summer 2015
Developed a heat-sensing LED array, on display in The Garage at Northwestern from 2015-2018
Managed multiple projects involving coding, sensors, robotics, mechanical design, and electronics design
Developed mutual inductance proprioceptive sensors for compliant actuators
Worked on novel shared human-robotic control algorithms for rehabilitative robotic devices
Currently developing computer-vision aided fingertip force and contact sensor for Robotic Manipulation tasks

Flashcut CNC, Deerfield, Illinois

Summer Intern: Research and Development

Summer 2018

Performed exhaustive research and aided in the development of Smart360 Hole Cutting Technology
Developed the needed mathematical relations to automate feeds and speeds in Flashcut's CNC software

Northridge Preparatory School, Niles, Illinois

Head Coach: Robotics Club

2016-Present

FIRST robotics clubs for grades 6-12, coaching a team in the FIRST Tech Challenge (FTC) and FIRST Lego League (FLL)
Our FTC team qualified for State Championships in the 2017-18 season, and made it to Top 10 in the 2018-19 season.

EDUCATION

Northwestern University, Evanston, Illinois

Bachelor of Science in Mechanical Engineering – Cum Laude, June 2017

Bachelor of Science in Manufacturing and Design Engineering – Cum Laude, June 2017

Master of Science in Mechanical Engineering, *Minor* in Engineering Management – June 2020

PhD Student in Mechanical Engineering

Current GPA: 4.00/4.00

ACHIEVEMENTS

NSF-GRFP Fellowship, Honorable Mention

Recipient of Cabell Fellowship 2017 (highest honor in McCormick School of Engineering for incoming graduate students)

Sole Recipient of 2015, 2016, and 2017 Arnold R & Edna F Weber Endowment Scholarships

Member, Pi Tau Sigma Mechanical Engineering Honor Society

Advisor and Former President, Tau Beta Pi Engineering Honor Society Illinois Gamma Chapter

Northwestern Murphy Scholar (Research Grant 2013-2017) and Ryan Scholar (2013-17)