

# David A. Perez Perez

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## CAREER OBJECTIVE

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Graduated with my bachelor's in Mechanical Engineering in May 2021. Pursuing a master's degree at FIU in Mechanical Engineering. Focusing on robotics and manufacturing to strengthen my coding and problem-solving skills. Looking to further explore internships or job opportunities that promote teamwork and innovative design and manufacture of devices or robots.

## EDUCATION

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### FLORIDA INTERNATIONAL UNIVERSITY, Miami, FL

*Master's in mechanical engineering, May 2023*

- GPA: 3.91.
- Analyzed vibration response of several systems using MATLAB.
- Learning programming languages such as Python and C++ and building code for ball tracking and path following.
- Using Abaqus to simulate the behavior of bar elements and perform FEA.
- Using Robot Operating System for autonomous driving for UGV designed and manufactured in class.
- Applying Linux command line with ROS to format master Raspberry Pi.
- Researched and developed a method for determining damage on sample metal and plastic parts using machine learning and neural networks presented at FCRAR.

### JACKSONVILLE UNIVERSITY, Jacksonville, FL

*Bachelor of Engineering in Mechanical Engineering, May 2021*

- GPA: 3.71 and made Dean's list since 2017.
- Learned microcontroller programming, 3D printing (200 + hours), basic machine shop equipment (CNC, Bridgeport, Lathe, table or vertical saw, and manual tools).
- Designed a PV/T cooling system that stores excess energy for Fluid Dynamics.
- Searched and generated possible conceptual solutions to improve future knee braces and selected the best one according to determined criteria for Manufacturing.
- Worked on a health screening device for COVID-19 that was presented in NCUR on spring 2021.

## CORE COMPETENCIES

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| • Communication          | • Leadership & Teamwork                 |
| • Detailed and Organized | • Product Design                        |
| • Impact and Influence   | • Process Improvement & Problem Solving |

## PROFESSIONAL EXPERIENCE

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### **FLORIDA INTERNATIONAL UNIVERSITY, MIAMI, FL**

*Graduate Research Assistant, January 2022 – Present*

- Led team to develop the prototype for the Autonomous Asphalt Laying Machine (AALaM).
- Researched and implemented autonomous driving capabilities using ROS for the AALaM.
- Implementing CV libraries using C++ and Python to create the vision infrastructure for driving autonomously.
- Helped develop communication between Arduino and ROS Master to include material depositing capabilities on the AALaM.
- Researched necessary elements to make AALaM functional (Power supply, cabling, stepper motors, DC motors, stepper drivers, digital encoders, microcontroller, raspberry pi, stereo and depth camera, etc.)

### **EASTERN ENGINEERING GROUP, Doral, FL**

*Engineer intern, May 2020 – July 2020*

- Got assigned new projects from clients.
- Interacted with those clients to generate a well-detailed proposal with drawings.
- Calculated the different loads of the structures drawn to ensure the system worked.
- Completed the proposal and calculations and sent them to my supervisor.

*AutoCAD drafter, May 2019 – July 2019*

- Performed research in critical new set of skills in AutoCAD for the company (Dynamic Blocks).
- Educated employees on the use of the new set of skills.
- Implemented the research in new projects improving the efficiency of the work.

## ADDITIONAL SKILLS

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- Bilingual in Spanish and English. Speak and write both languages fluently.
- Proficient in Microsoft Office, AutoCAD, SolidWorks, and Fusion 360. Also, knowledge of Mathcad, Ansys, LabView, and MATLAB.
- Programming in C++ and Python.
- Robot Operating System.
- Captain of the Jacksonville University Sailing Team 2020-2021.