Andres Perez

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EDUCATION

University of Notre Dame **Graduation Date: May 2028**
Bachelor of Science in Computer Engineering | Minor: Engineering Corporate Practice GPA: 3.7/4.0
Engineering Study Abroad: London, England May 2025 – Jun. 2025
Notre Dame Aerospace Career Trek: Northrop Gruman, JPL, SpaceX Jul. 2025
Enrolled Courses: Data Structures, Discrete Math, Intro. to ECE, Engineering Physics II, Linear Algebra & Differential Equations

RESEARCH & WORK EXPERIENCE

Student Researcher | Department of Electrical Engineering Aug. 2025 – Present
- Developing a real-time Python software interface for tracking and visualizing GPS-enabled test resources, for drones and software-defined radios, that parses NMEA strings to extract GPS data and displays it on a live map using the folium library, supporting various research experiments.
- Creating weekly PowerPoints to summarize project progress and update next goals.

Engineering Career Assistant | Meruelo Family Center for Career Development Sep. 2025 – Present
- Coauthoring a bi-weekly newsletter for sophomores, juniors, and seniors, highlighting career opportunities and alumni spotlights from various majors and post-graduate experiences.
- Grew the letter to an 77.6% Open rate to an 1.9% click rate of 516 recipients.

ENGINEERING PROJECTS & LEADERSHIP

IrishSat's Gravitational Orbital Attitude Thermal Lab | CubeSat Team **Notre Dame, IN**
Electronics Lead Aug. 2024 – Present
- Spearheading a team of 6+ engineers for the embedded systems development and PCB design initiatives for testing equipment, particularly a Helmholtz cage project, coordinating hardware-software integration efforts across cubesat projects.
- Collaborated under expert mentorship to refine IrishSat's Helmholtz Cage design, integrating PCB design (KiCad), control algorithms (MATLAB), and embedded Linux systems (Raspberry Pi) into a unified testing platform.
- Assembled a custom 2S2P battery pack using 18650 lithium-ion cells to make a 7.2V 7000 mAh battery pack. The completed pack was then integrated with a Battery Management System (BMS) to validate its nominal values.
- Used multimeters, LCR meters, multimeters, logic analyzers, power supplies, soldering equipment, and spot welders to complete assembling tasks.

Hardware-Accelerated Human Activity Classifier | Independent Project **Long Beach, CA**
- Built a wireless data acquisition system using two Arduino Uno R3s, an MPU-9250 IMU sensor, and nRF24L01 RF transceivers.
- Developed a C++ sketch to sample accelerometer and gyroscope data and transmit it wirelessly to a receiving station. Along with a Python script to receive, parse the real-time sensor data, generating a custom labeled dataset for walking and sitting.
- Trained a 1D Convolutional Neural Network in PyTorch to classify human activities with 96.7% accuracy, documenting model stability and performance by visualizing accuracy against hyperparameters (learning rate, window size, and optimizer).

Helmholtz Cage Driver PCB **Notre Dame, IN**
- Designed a custom Arduino R3 hat PCB using KiCad to integrate and optimize Arduino, magnetometers, and H-bridge circuits, reducing assembly complexity.
- Amended the generated Bill of Materials and Component Placement List files export to JLCPCB for manufacturing.

Air Quality Sensor Housing | Engineering Design **Notre Dame, IN**
- Collaborated with a team of four engineering students to develop and iterate on sensor housing with a rack-and-pinion opening mechanism actuated by a servo motor and ESP32-based microcontroller.
- Designed and prototyped with SolidWorks in two design phases, optimizing for form, fit, function, and durability through iterative testing and feedback.

Portfolio Website | andres-perez.github.io **Long Beach, CA**
- Developed a student and engineering project portfolio website with Astro and Tailwind CSS frameworks as the front end.

TECHNICAL AND LANGUAGE SKILLS

Programming: C/C++ (OpenGL), Python (Threading, Socket, Flask, Pytorch, Pandas, Numpy, Folium), Git, MATLAB, Astro
Tools: Microsoft Office Suite (Word, PowerPoint, Excel), KiCad, Vim, SolidWorks, Fusion 360
Language: English (Bilingual), Spanish (Bilingual) **Skills:** Technical Writing, Electronics Soldering
Hobbies: Japanese(N4-N5), Chess (1000+ Rapid)