Andres Perez

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EDUCATION

University of Notre Dame   **Notre Dame, IN**
Bachelor of Science in Computer Engineering | Minor: Engineering Corporate Practice | GPA: 3.7   *Graduation Date: May 2028*
Study Abroad: *London, United Kingdom*

WORK EXPERIENCE

University of Notre Dame   **Notre Dame, IN**
Student Researcher   *Aug. 2024 – Present*
- Researched under Prof. Chaoli Wang by data labeling image data and downloading GSV data of households, surveying heat dissipation in household.

ENGINEERING PROJECTS

Live Sensor Data Visualization System   **Long Beach, CA**
Developer
- Developed a real-time data visualization interface in Python (Tkinter/Matplotlib) for serially streamed MPU9250 sensor data from an Arduino-compatible microcontroller.
- Engineered a modular project structure including serial communication controllers, GUI logic, and sensor data parsing to enable future reuse across embedded systems projects.
- Validated end-to-end system by integrating sensor readings, asynchronous serial data handling, and python threading for smooth user interaction.

IrishSat's Pi Hat PCB   **Notre Dame, IN**
Designer
- Designed a custom Arduino R3 hat PCB using KiCad to integrate and optimize Arduino and H-bridge circuits, improving system efficiency and reducing assembly complexity.
- Created and corrected the generated Bill of Materials and Component Placement List files from KiCad to export to JLCPCB for manufacturing.

Air Quality Sensor Housing   **Notre Dame, IN**
Designer
- 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-perez0.github.io   **Long Beach, CA**
Developer
- Developed a portfolio website with Astro and Tailwind CSS frameworks as the front end

LEADERSHIP AND ACTIVITES

IrishSat's Gravitational Orbital Attitude Thermal Lab   **Notre Dame, IN**
Electronics Lead   *Aug. 2024 – Present*
- Appointed as incoming Electronics Lead to oversee embedded systems development and PCB design initiatives for the Helmholtz cage project, coordinating hardware-software integration efforts across the cubesat projects.
- Engineered a Python-based data acquisition pipeline for magnetometer readings from Arduino, converting raw serial outputs into MATLAB-compatible formats for post-processing and modeling.
- 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.

TECHNICAL AND LANGUAGE SKILLS

Programming: C, C++, Python, Git, MATLAB   **Tools:** Microsoft Office Suite, KiCad, Vim, SolidWorks, Fusion 360
Skills: Technical Writing, Electronics Soldering   **Language:** English (Native), Spanish (Bilingual)