Andres Perez

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Experience

High School Tutor — Carson, CA
Long Beach Unified School District · Part-Time — Sep. 2022- May 2023; Aug. 2023 - May 2024
- Fostered an academic environment by leading peer-based pedagogy and promoting collaborative learning.
- Provided tutoring in subjects, including Geometry, Algebra 2, AP Pre-Calculus, AP Calculus AB & BC, AP Physics 1, AP Computer Science Principles, Computer Science Essentials, and Japanese.

Electrical Subteam — Carson, CA
Ailurus Industries · California Academy of Math and Science — Aug. 2023 - Jun. 2024
- Collaborated with a team of 30+ students to design, manufacture, and construct modular robots capable of reconfiguration for versatile tasks, including artifact retrieval.
- Enhanced UPenn's SMORES-EP cubic model by integrating an ESP32-UWB microcontroller, implementing a bevel gear design for differential drives. Applied NASA soldering standards in designing both physical body and electrical layouts, maintaining a 5-inch cube constraint for each module.

VEX Captain — Carson, CA
California Academy of Math and Science · Long Beach Unified School District — Aug. 2021 - Oct. 2023
- Led a team of 12 juniors and seniors in designing and constructing a competitive robot for a State-Level competition.
- Structured team meetings, facilitated performance reviews, and guided iterative improvements through targeted feedback.
- Leveraged Fusion 360 for detailed design, animation, and analysis of robotics assemblies.
- Established a partnership with a local high school VEX robotics team to co-host competitions and participate in joint scrimmages, enhancing community engagement and collaborative learning.

Lemelson-MIT InventTeam — Palos Verdes, CA
Mechanical Team · Rolling Robots — Aug. 2022 - Nov. 2023
- Collaborated with a team of 15 to draft a winning proposal, securing a $7,500 grant as one of ten selected teams, focusing on design solutions for larger urban and tourist areas in my hometown.
- Applied Fusion 360 for design and stress testing of critical Smart Walker components, including the frame, seat, and handles.
- Utilized iterative prototyping to refine the Smart Walker for presentation at the 2023 Lemelson-MIT EurekaFest.

Projects

IrishSat-Goat Lab — August 2024-Present
- Developed a Python program to process serial output from magnetometer and Arduino, converting magnetic vector value readings into a MATLAB-readable text file.
- Under mentorship in usage of KiCad, Matlab, and Raspberry Pi towards iterating IrishSat's Helmholtz Cage design

Portfolio Website - andres-perez0.github.io — July 2024-Present
- Developing a portfolio website with Astro and Tailwind CSS frameworks as the frontend.

Technical Skills

Programming: C++, Python, Git, Java, HTML, CSS
Computer-Aided Software & Hardware: Fusion360, Excel, KiCad, Soldering
Language: English (Native or bilingual proficiency), Spanish (Native or bilingual proficiency)

Academics

University of Notre Dame — Notre Dame, IN
Bachelor of Science in Computer Engineering with Engineering Corporate Practice minor — Aug. 2024 - May 2024
Activities and Awards: IrishSat, Robotic Football, Notre Dame-AIMM, Student Researcher, Society of Latino Engineers and Scientists

Long Beach City College — Long Beach, CA
Dual Enrollment, Computer Science — Jun. 2022 - Jun. 2024
GPA: 3.91
Relevant Coursework: Multivariable Calculus, Data Structures and Algorithms, Adv. Computer Science - C++, Intro. To Computer Science - C++, Critical Thinking, and Intro. To Existentialism

California Academy of Math and Science — Carson, CA
High School Diploma, Engineering and Computer Science Pathway — Aug. 2020 - Jun. 2024
GPA: 4.38
Activities and Awards: Questbridge National Match Finalist; Student Tutor; Lemelson-MIT InvenTeam Grant; AP Scholar with Distinction; VEX Robotics Club (Captain); Boys Volleyball (Varsity, Co-Captain[11th]); Cross Country (Varsity[10th]);

I explored the fundamentals of Game Theory through The Battle of Polytopia