Andrew Campos

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EDUCATION

Columbia University | New York, NY — Aug 2024 - May 2028
B.S. in Mechanical Engineering; Minor in Aerospace Engineering — GPA 3.84/4.0, Dean's List

- ***Relevant Coursework:*** Linear Algebra, Multivariable Calc, Physics Mechanics/E&M/Waves, Data Structures, Intro to CS for Eng
- ***Activities:*** Columbia Club Rugby Member, Creative Machines Lab Researcher

Los Altos High School | Los Altos, CA — Aug 2024 - Jun 2024
High School Diploma — GPA 3.98/4.00

EXPERIENCE

Power Stroller Research Project | **Creative Machines Laboratory** | New York, NY — Feb 2025 – Present
Project Co-Lead

- Co-Leading the design and prototyping of a detachable Segway-like powered tow for non-electric wheelchairs under Professor Hod Lipson in Columbia's Creative Machines Lab. Co-managing projects through budgeting, planning, and communication in the lab.
- Contributing through manufacturing, assembly, and research of key components— frame construction, attachment mechanisms, wheels, axles, sprockets, batteries, motor, and controller— ensuring full-system integration and functionality.

NASA Research Engineering Internship | Mountain View , CA — Jun 2025 – Aug 2025
Intelligent Systems Division | Ames Research Center

- Developed and scaled a motor-actuated tensegrity structure based on a previous NASA design to explore lightweight, compliant systems for robotic mobility. Utilized climbers string and carbon fiber rods for the tensegrity foundation.
- Developed an omnidirectional control system using servos and controlling the movement through a light Pololu controller. The robot successfully survived and continued working after multiple 30 foot free falls. Successfully scaled initial design to 5 feet in diameter.
- Currently developing a research paper with Adrian Agogino on our work with intentions of publishing with SciTech 2026.

UC Berkeley HiPeRLab | Berkeley, CA — May 2025 – Jun 2025
Research Assistant

- Volunteered at UC Berkeley's High Performance Robotics Lab under Professor Mark Mueller. Focused on mechanical design and weight optimization of the PairTilt quadcopter. Contributed to airframe redesign through iterative CAD modeling.

Formula SAE | New York, NY — Oct 2024 – May 2024
Frame/Body/Aero Team Member

- Designed and optimized aerodynamic components by modifying CAD designs for race car's front and rear wings to increase downforce and traction, improving the car's aerodynamic performance and controls.
- Use computational fluid dynamics (CFD) simulations in Altair to test CAD design performance under wind tunnel conditions. I analyze downforce, drag, and flow separation to optimize wing designs for maximum aerodynamic efficiency and traction.

Nuclear Reactor Modeling and Simulation | Los Altos, CA — Dec 2022 – Nov 2023
Research project

- Used OpenMC and python framework, Paramak, to conduct Monte Carlo simulations on 3D tokamak reactor models, optimizing tritium breeding ratios (TBR) by analyzing material performance, neutron multiplication, blanket thickness, and lithium enrichment.
- Identified optimal reactor configurations by testing various component sizes, materials, and lithium enrichment. Found best configurations through measurement tallies on tritium production, neutron multiplication, and heat production.
- Developed a comprehensive research paper on findings and currently working towards publishing work with APS.

Pyka inc. | Oakland, CA — Jul 2023
Engineering Consultant Intern

- Designed CAD models in SolidWorks and contributed to the full electric aircraft lifecycle by assembling, wiring, and integrating aircraft components and systems, including spray, motor, lighting, and high-voltage battery technologies.

LEADERSHIP EXPERIENCE:

Los Altos High School | Los Altos, CA — Aug 2021 - Jun 2023
Class President

- Served as a liaison between school leadership, administration, and the 500 person Class of 2024, successfully raising over $40,000 for scholarships and events through innovative fundraising initiatives. Led over 30 class council meetings, fostering collaboration and driving impactful student engagement. Received "Certificate of Special Congressional Recognition for work.

SKILLS & INTERESTS

Technical Skills: Intermediate Java, Intermediate Python, CAD (SolidWorks, OnShape), Monte Carlo Simulation (OpenMC), Computational Fluid Dynamics (Altair), 3D Printing, Laser Cutting, Microsoft (Word, Excel, PowerPoint), Adobe (Photoshop, InDesign),
Language: English, Intermediate Spanish
Licensed Pilot: Airplane Single Engine Land & Instrument Rating 220+ Hours, 100 hours Pilot in Command, 430+ Takeoffs/Landings in High Performance Single Engine Aircraft: Cirrus SR22's
Interests: Aviation and Aerospace, Creative Design, Artificial Intelligence & ML, Electric Propulsion Systems, Vertical Lift Technologies