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Mario Ferre

101 S 39th St,
Philadelphia, PA, 19104

Education

University of Pennsylvania, Philadelphia, PA **Aug 2019 - May 2023 (Expected)**
B.S.E. in Mechanical Engineering and Applied Mechanics.
Minors in Eng. Entrepreneurship and Computer Science. Cumulative **GPA: 3.8 / 4.0.**

Experience

Design & Development Intern **May 2021 - Aug 2021**
Toyota Racing Development

- Developed a modular accumulator for a prototype electric vehicle, packaging its battery, HV and cooling components.
- Evaluated the quality and performance of a prototype EV via K&C and CoG testing, blue light and laser scanning.
- Prototyped and implemented chassis mounts, body enclosures, and drivetrain adapters for an electric powertrain.

Lead Engineer **Sep 2019 -Present**
Penn Electric Racing — Formula SAE

- Managed the design and fabrication of a multi-element aero package for a formula racecar, developed using STAR-CCM+ simulations, achieving a coefficient of downforce of 3.75, a 45% increase compared to previous designs.
- Coordinated multiple design projects in Driver Interface, Vehicle Systems, Chassis, and Product Design.

Teaching Assistant — Introduction to Mechanical Design **Aug 2020 - Present**
Penn Engineering — University of Pennsylvania

- Introduced students to rapid prototyping methods (3D printing, CNC, laser cutting) in a project-based lab.
- Trained students on 3D CAD software (SolidWorks, AutoCAD) and engineering validation methods (FEA).

Mechanical Design and Analysis Intern **Jul 2020 - Aug 2020**
Santobono Innovation — Startup

- Standardized a 3D-printed orthopedic cast, cutting required patient hospital visits by half during the COVID-19 pandemic.
- Remodeled and analyzed an ABS 3D-printed orthopedic cast using FEA, achieving a 31% reduction of the overall stress experienced by the cast under normal use, while increasing the weight only by 6%.

Assembly Team Member **Jan 2017 - Feb 2019**
Italian Space Agency — Multitrop Project

- Assembled a space farming experiment unit sent on the ISS, compiling the assembly procedures with a team of mechanical and electrical engineers from the Italian Space Agency, ESA, and Kayser Italia.
- Presented the project's findings in seminars organized by the Italian Space Agency, attended by over 300 students.

Honors and Awards

Penn World Scholar — University of Pennsylvania
Chosen from over 700 international students to represent Penn's intercultural leadership and talent, by participating and presenting in a series of career development seminars, leadership workshops, and guest conferences.

Youth on the ISS Competition Winner — Italian Space Agency
ISS competition set up by the Italian Space Agency in 2017 to recognize student teams with innovative space experiments. The Multitrop Project experiment was chosen from over 15 university student teams because of its cost-efficient design.

Skills and Interests

Software: SolidWorks, Ansys, Geomagic Design X, Adams Car, Star CCM+, HTML, C, Excel, AutoCAD, Java, MATLAB, Python.

Hardware: Rapid Prototyping (3D printing, CNC, laser cutting), Carbon Fiber Layups, Machine Shop Equipment (CNC Mill, Lathe, Bandsaw, Powertools), Handheld Laser Scanning, Blue Light Scanning, MTS Test Systems.

Interests: Woodworking, Fencing, Hiking, VR Sim Racing, Painting, Italian Cooking, Design and Architecture.

Portfolio: marioferre.com
LinkedIn: linkedin.com/in/mario-ferre