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# Mario Ferre

3939 Baltimore Ave,
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 Computer Science and Mathematics. Cumulative **GPA: 3.7 / 4.0.**

Silvestri Scientific High School, Portici, Italy **Sep 2014 - Aug 2019**
Applied Sciences Curriculum, Graduation Grade: 100 cum laude (4.0 GPA).

## Experience

**Aerodynamics and Suspension Team Engineer** **Sep 2019 -Present**
Penn Electric Racing — Formula SAE

- Managed the fabrication and implementation of multi-element front, rear, and side wings for a formula racecar.
- Overhauled the suspension subsystem by establishing SolidWorks design resources and Adams Car simulation templates.
- Implemented aero-efficient tire temperature sensors, strain gauges, and body enclosures for an autonomous test vehicle.
- Developed a SolidWorks surface-modeled carbon fiber steering wheel, reducing steering effort by 20%.

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

- Introduced engineering students to programming, CAD, mechanical design principles, rapid prototyping.
- Trained students on the proper use of laser cutters (MDF, Acrylic, Foam) 3D printers (ABS, PLA), and power tools.

**Mechanical Design & Analysis Intern** **Jul 2020 - Aug 2020**
Santobono Innovation

- Remodeled and analyzed a ABS 3D-printed orthopedic cast using FEA, achieving a 30% reduction of the overall stress experienced by the cast under normal use, while increasing the weight only by 5%.
- Standardized the cast model eliminating the need for time-consuming 3D scans during the coronavirus pandemic.
- Optimized the 3D-printing process to achieve the maximum possible stiffness out of high performance ABS.

**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 aimed to cultivate team management potential.

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

## Skills and Interests

**Software**: SolidWorks, Ansys, MSC Adams Car, Star CCM+, HTML, Arduino, C, Excel, Fusion 360, Java, MATLAB, Python.

**Hardware**: 3D Printing (ABS, Acrylic, Aluminium, PLA), Carbon Fiber Layups, Laser Cutting (MDF, PVA), Power Tools.

**Relevant Coursework**: Intro to Mech Design, Mechanics, Statics, Strength of Mat., Dynamics, Thermodynamics, Machine Design and Manufacturing, Intro to Comp Prog, Prog. Lang. I, Mathematical Found. of Comp. Sci, Calculus I, II, & III, Analytical Methods for Engineering, Negotiations and Conflict Resolution, Engineering Ethics.

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