# Serena Frolli

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## EDUCATION

**Northwestern University,** Robert McCormick School of Engineering**,** Evanston, IL 9/22 - present
Bachelor of Science in Mechanical Engineering and Minor in Physics, Anticipated June 2026
GPA: 3.6/4 - Relevant Coursework: Aerodynamics, Stress Analysis, Mechanical Vibrations, Heat Transfer, Fluid Dynamics
Masters of Science in Mechanical Engineering, Anticipated March 2027
**Istituto di Istruzione Superiore Savoia Benincasa High School**, Ancona, Italy 9/18 – 6/22

## RELEVANT EXPERIENCE

**Zipline,** South San Francisco 9/25 - 12/25
***Technical Program Management Intern, Avionics***

- Managed timelines for three key products in a company-wide cost and mass-reduction redesign campaign, enabling integration into first next-generation aircraft builds
- Drove cross-functional execution by facilitating goal alignment, tracking dependencies, and communicating progress between engineering and leadership stakeholders using Jira and Wrike
- Coordinated between electrical, mechanical, and systems engineers to resolve blockers during design iterations
- Provided updated "source of truth" documentation to align priorities across avionics team

**Tesla,** Gigafactory Berlin Brandenburg 6/25 - 9/25
***Mechanical Design Engineering Intern, Manufacturing and Testing Team***

- Owned the redesign of a high voltage end effector for a top-level assembly tester for Supercharger V4, improving manufacturability, durability, ergonomics and ensuring unit defect detection capabilities
- Designed a frame for an end-of-line precision PCBA tester considering electrical routing and tolerance requirements for fine alignment of tester pins with unit under test, conducting mechanical design reviews with stakeholders
- Improved testing technologies and equipment reliability through continuous troubleshooting, defect detection optimization, and long-term system enhancements

**METALS (Metallic Expandable Technology for Artemis Lunar Structures),** Evanston, IL 9/23 - 3/25
***Lead Test Engineer***

- Led a diverse engineering team, managing budget constraints and technical development to deliver a functional final product while staying under the allocated budget as part of the 2024 NASA Big Idea Challenge
- Performed FEA simulations in ANSYS, optimizing the design to achieve a 35% reduction in stowed volume while maintaining structural integrity in lunar gravity conditions
- Fabricated 40+ prototypes using TIG welding, water jet cutting, and hydroforming, reducing design cycle time
- Executed vacuum chamber and cryogenic testing, validating performance in a relevant lunar environment and elevating the structure's Technology Readiness Level (TRL) from 3 to 5
- Won the Artemis Award for outstanding innovation in space technology and secured a $146,000 NASA grant for developing a low-SWaP (Size, Weight, and Power) inflatable technology

**Northwestern University Space Technology and Rocketry Society**, Northwestern University 9/24 - 2/25

- Conducted wind tunnel testing for the NUSTARS Active Drag System (ADS) for the 2025 NASA Student Launch Competition Rocket, to map actuation states to drag coefficients
- Optimized 16-hour test schedule, maximizing the number of design points for wind tunnel test experiment by varying velocity (up to Mach 0.31), angle of attack, and ADS actuation state
- Analyzed discrepancies between Computational Fluid Dynamics (CFD) and empirical results to inform future simulations

## LEADERSHIP EXPERIENCE

**Northwestern University Women's Cross Country Team**, Evanston, IL 9/22 - present
***Student-Athlete***

- Cultivated teamwork, communication, and resilience as a competitor at the NCAA Division I level
- Balanced academics with 25+ hours of weekly athletic commitments, earning Academic All-Big 10 Honors
- Fostered a positive team dynamic by supporting teammates, resolving conflicts constructively, and encouraging accountability

## LANGUAGES AND SKILLS

**Language:** Italian (native), English (bilingual), French (proficient), Spanish (conversational)
**Computer:** ANSYS Structural, ANSYS Fluent, Siemens NX, SolidWorks, Python, MATLAB, R, FIGMA, HTML, Office