Hugo L. Mazzali

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected May 2027**
Bachelor of Science, Mechanical Engineering
Relevant Coursework: Statics and Mechanics of Solids, Electromagnetism, Thermodynamics, Material Mechanics, Fluids Dynamics, System Dynamics, Mechanical Design, Multivariable Calculus, Differential Equations, Linear Algebra

Corning-Painted Post High School, Corning, NY
Mastery in Math and Science, Varsity Track, Varsity Soccer **Graduated May 2023**

SPECIALIZED SKILLS

Programs: Python, MATLAB, C++, SolidWorks, G-Code, Ansys FEA, GD&T, Microsoft Suite, Adobe Suite,
Mechanical and Test Systems: Wheel Force Transducer, Dynamometer, hydraulic and linear actuators, CNC (3-Axis), Manual Mill and Lathe, Tig Welding, Metal Working and Manufacturing, 3D Printing, Hand tools.
Languages: English (fluent), Portuguese (fluent), Spanish (fluent), Italian (intermediate)

ENGINEERING EXPERIENCE

Cornell Baja Racing, Cornell University, NY, Suspension Team Member **Oct 2023-Present**

- Designed and manufactured carbon fiber front and rear tie rods, performing ANSYS ACP and physical testing to validate FOS
- Optimized adhesive bonding process between aluminum and carbon fiber, reducing manufacturing time
- Integrated U-joint and clamped rack interface into steering column to reduce steering effort and component wear. Added sinusoidal relation between driver input and steering output to driver spec
- Currently designing and manufacturing front A-arm suspension and manufacturing fixtures
- Machined on-car components, maintained and rebuilt legacy vehicles, serviced vehicle in competition

Corning Incorporated, R&D Mechanical Systems, Corning, NY, Intern **Jun 2022-Sep 2022**

- Designed and built an automated fluid dispensing system for fiber optic manufacturing, integrating pneumatic actuators and closed-loop controls to replace a fully manual process
- Developed custom dependency library to drive actuators, maintaining compatibility with existing framework
- Wrote G-Code interpreter to interface CNC machinery with automation software
- Independently constructed and operated lab CNC

PROJECTS

Honda CX 500, *Personal Project* **June 2025-Present**

- Full mechanical teardown and redesign of a 1979 motorcycle; machining and welding structural members

Vehicle Dynamics MATLAB Simulator, *Personal Project* **Aug 2025-Present**

- Built dynamic suspension geometry and load transfer model for offroad vehicle

CAMPUS INVOLVEMENT

BRASA Cornell, *Member* **Aug 2023-Present**
Cornell Footvolley, *Member* **Aug 2023-Present**
Recreational Soccer Leagues, *Member* **Aug 2023-Present**

VOLUNTEERING

Habitat for Humanity Restore, Corning, NY **2022-2024**
Meals on Wheels, Corning, NY **2019-Present**

OTHER INTERESTS

Art and Design / Metalworking / Vehicle racing of all kinds / Photography / Music / Model making / Travelling

References available upon request