

LUCCA CORREIA

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EDUCATION

CORNELL UNIVERSITY, Major in Mechanical Engineering; Intended Minor in Robotics
Cumulative GPA: 3.94/4.0; Dean's List all semesters 2022-2024

Ithaca, NY
Expected May 2026

HORACE MANN SCHOOL (HM)
Cumulative GPA: 3.88/4.0

Bronx, NY
2015 - 2022

WORK EXPERIENCE

MITRE Corporation

May 2024 – Aug 2024

Mechanical Engineering & Robotics Intern

Bedford, MA

- Simplified complex SolidWorks aircraft component model via Ansys SpaceClaim to prepare for Ansys Icepak analysis
- Calculated volume flow for required power distribution to determine fan selection
- Ran initial simulation with minimized assumptions then proposed variables and conditions to optimize cooling and ran simulations for each (altitudes, materials, geometries, fans, boundary conditions)
- Confirmed solutions with heat transfer hand calculations
- Independently learned MSOSA SysML from company courses (detailed BDD's, IBD's, Activity Diagrams, & Simulations)
- Developed comprehensive SysML models of a complex aircraft electronic system including simulations for visualization
- Collaborated with team members to ensure the model properly reflects prototype and compiled LaTeX documentation

DCC AUTOMATION

July 2023 – Aug 2023

Mechanical Engineering & Robotics Intern

Brewster, NY

- Modeled SolidWorks parts and assemblies from complex engineering drawings and created motion studies from systems
- Developed AutoCAD robotic systems drawings by independently collecting measurements, dimensions, and layouts
- Created part drawings for production with in-house CNC five-axis mill and lathe, welding tools, and overall assembly

DRAKE LABS & ORBITAL COMPOSITES

Jun 2020 – Jun 2022

Two-Year Robotics Intern

- Researched, modeled, and constructed, custom tensile tester to quantify and standardize carbon fiber shoe deformation
- Machined cold-rolled steel plates on CNC mill using CAM files and manual paths; Learned to weld plates to vertical struts
- Programmed with Python on Raspberry Pi; designed custom breadboards to include relays and sensors

ROSS SCHOOL U5-U15 SOCCER PROGRAM

East Hampton, NY

- US Licensed Soccer Coach (three consecutive summers)

July 2020 – July 2022

ENGINEERING AND ROBOTICS EXPERIENCE

NEXUS (Cornell Engineering Project Team)

Sep 2022 - Present

Mechanical Subteam Lead

- Leading effort in fully designing (SolidWorks), machining, and assembling a swerve drive system to maneuver on beach
- Developed MatLab scripts to calculate required torque for robot drive motors to perform on complex terrain with filtration
- Led intake and filtration mechanism for autonomous robot to filter out and collect microplastics from beaches
- Machining via machine shop CNC mills, lathes, laser cutters, 3D printers, band saws, belt sanders, and hand-held power tools

FIRST® ROBOTICS (FRC) HIGH SCHOOL TEAM

2018-2022

Full-Team Captain, Hardware Subteam Member

- 2022 NYC Regional Champion & World Championship Qualifier (Houston, TX)

ACTIVITIES

SOCCER (Cornell United Club Team & HM Varsity Team)

2018 – Present

USSA AND FIS SKIING (HM Varsity Team & Blue Mountain Ski Team USSA U16 State Champion)

2012 – 2022

TECHNICAL SKILLS & ADDITIONAL

- Machining Experience: 3D printer, CNC three-axis mill, lathe, band saw, laser cutter, drill press, hacksaw, and jigsaw
- Software & Modeling: SolidWorks, Fusion 360, MatLab, MSOSA SysML, Ansys (Icepak & Mechanical), Python, LaTeX
- Interests: Hiking, fly/deep sea fishing, mountain biking, steel drums & drum set, turntable mixing, tennis, golf