

LUCCA CORREIA

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EDUCATION

CORNELL UNIVERSITY, Major in Mechanical Engineering; Intended Minor in Robotics
Cumulative GPA: 3.99/4.0; Dean's List all semesters 2022-2025

Ithaca, NY
Expected May 2026

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

Bronx, NY
2015 - 2022

WORK EXPERIENCE

FOUNDATION

May 2025 – Aug 2025

Mechanical Robotics Engineering Intern

San Francisco, CA

- Independently completed the assembly of entire Phantom MK1 Humanoids including structures, linkages, motor encoder soldering, power and signal harnesses fabrication, actuator calibration, and robot bring-up; Worked on manufacturing floor to complete humanoid repairs and often independent debugging
- Designed work holding fixtures in OnShape for CNC milling of actuator encoder parts; used CAM software to generate GCODE for jobs; set up and operated 3-axis CNC mill to complete jobs
- Created comprehensive build instructions and assembly workflow for the entire lower body via CAD; Communicated with process engineers and technicians for feedback to optimize instructions and overall workflow

MITRE CORPORATION

May 2024 – Aug 2024

Mechanical & Systems Engineering Intern

Bedford, MA

- Independently modeled and analyzed aircraft component model via Solidworks & Ansys Icepak FEA Software
- 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
- Developed comprehensive MSOSA SysML (detailed BDD's, IBD's, Activity Diagrams, & Simulations) models of complex aircraft electronic system

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
- 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

- Modeled and constructed custom tensile tester to quantify and standardize carbon fiber shoe deformation
- Machined cold-rolled steel plates on 3-axis CNC mil; assembled structural beams and dynamic support platform
- Programmed with Python on Raspberry Pi then populated breadboards to include relays and sensors

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
- Defining executable system level requirements and test cases with electrical, software, and business leads; Integrating mechanical and electrical systems (intake, filtration, drivetrain, battery, motor drivers/encoders, PDB & PCBs, GPS) on rover
- Developed MatLab scripts to calculate required torque for robot drive motors to perform on complex terrain with filtration
- Designed and manufactured intake and filtration mechanism to filter out and collect microplastics from beaches

CORNELL MAE 4190 FAST ROBOTS COURSE

Jan 2025 - May 2025

- Designed and fabricated a fast autonomous car with dynamic system modeling and integrating reactive gyroscope and time-of-flight sensor feedback on an embedded processor – extensive programming in C++ and Python
- Achieved fully autonomous navigation and path planning via real time localization and linear/angular PID control
- Hands-on experience with rapid prototyping, system debugging, and partial off-board computation

FIRST® ROBOTICS (FRC) HIGH SCHOOL TEAM

Sep 2018 - Sep 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, US Licensed Coach)

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, MatLab, MSOSA SysML, Ansys (Icepak & Mechanical), Python, C++, LaTeX, CAM