

Lukas Minutello

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EDUCATION

Cornell University, College of Engineering – Ithaca, NY

Expected May 2026

Bachelor of Science, Mechanical Engineering, Dyson Business Minor for Engineers

PROFESSIONAL EXPERIENCE

Cornell Baja Racing, Ithaca, NY

Oct 2022 – Present

- Design, manufacture, and assemble an off-road vehicle to compete in the SAE Collegiate Baja Design Series.
- 50 plus hours of manual mill and lathe experience.

Brakes Subteam Member

July 2025 – Present

- Designing floating brake rotors with reduced weight, minimized brake drag effects, less warping potential, more reliable pad contact, and better serviceability/ease of assembly.
- Conducting temperature testing on legacy rotors for raw temperature values and to quantify effects of brake drag.
- Doing coupled structural-thermal FEA in ANSYS using braking load cases and temperature logs to visualize stress and thermal expansion, informing material selection, air gap size, and other design parameters.

Suspension Subteam Member

July 2023 – June 2025

- Modeled the front uprights in SolidWorks to comply with tighter constraints prompted by the suspension geometry.
- Performed FEA in ANSYS using load cases derived from wheel force transducer testing, informing optimal locations for material addition/removal and retaining legacy FOS despite tighter packaging.
- Designed the tie rods and steering column using carbon fiber tubing and aluminum inserts for weight reduction.
- Developed adhesive bonding processes using two-part epoxies, cleaning solvents (IPA, acetone, MEK), and specialized abrasion, achieving a 50% increase in bond shear strength as measured by torsion and pull-out testing.
- Modeled carbon fiber tie rod tubes in ANSYS ACP using manufacturer layup data and performed Euler buckling analysis to validate the reported critical load.

Cornell Architectural Robotics Lab, Ithaca, NY, *Research Intern*

May 2025 – Aug 2025

- Developed CAD assembly for the *home+* robot and generated URDF files for motion planning in ROS2/RViz.
- Modified arduino serial control code to send motion planning results to the *home+* robot.
- Cut and welded several aluminum L-channel square frames to be used as moving platforms for *Robot-Room*.

NYC Health + Hospitals/Woodhull, Brooklyn, NY, *Biomedical Equipment Technician Intern*

July 2024 – Aug 2024

- Troubleshoot and resolved 50 plus mechanical and electrical issues in multiple hospital departments.
- Performed planned maintenance procedures and electrical safety inspections on patient care equipment.
- Processed and closed 1,000 plus work orders in the Crothall device database to ensure accurate equipment tracking.
- Optimized work order assignment and documentation to streamline the workflow of senior BMETs.

Code Brown, New York, NY, *Product Development Intern*

May 2023 – Aug 2023

- Designed a scent detection device using gas sensors to monitor baby health/diaper changing and patient well-being.
- Created odor classification algorithms in BME AI-Studio to map multivariate sensor data to user defined scents.

SKILLS & CERTIFICATIONS

Design: CAD (SolidWorks, Fusion360), FEA (ANSYS), PCB Design (KiCAD), DFMA

Manufacturing: Machine Shop Trained (Lathe, Mill), CNC Operation and Programming, 3D Printing, Soldering

Programming: MATLAB, Python, LaTeX, Excel

Certifications: SolidWorks CWSA, Bloomberg Market Concepts, Microsoft Office Specialist

ADDITIONAL EXPERIENCE

Tech4Teens, Inc. Nonprofit, Astoria, NY, *Senior Advisor*

Oct 2022 – Present

- Providing personal computers to NYC students for education and career development.
- Advising on reliable, cost-effective hardware selection and overseeing computer assembly.

Bronx High School of Science Robotics, The Bronx, NY, *Construction Team Lead*

Oct 2018 – June 2022

- Taught and oversaw members of the construction department of the Sciborgs (1155) robotics team.
- Responsible for the operation of the team's Laguna IQ CNC router and creating toolpaths on Fusion 360 CAM.