TREVOR BOSHNACK

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EDUCATION

Mechanical Engineering | Cornell University | College of Engineering | Ithaca, NY | GPA: 3.9   Expected May 2028
Relevant coursework: Statics | Dynamics | Mechanics and Heat | Electromagnetism | Differential Equations | Linear Algebra

Great Neck South High School | Great Neck, NY | Unweighted GPA: 96.2   June 2024

EXPERIENCE

Cornell Baja SAE, Transmission Subteam, Ithaca, NY   November 2024 – Present
- Designed transmission's secondary clutch for 2x load increase (600->1200lb), with only 5% mass increase
  - Finite Element Analysis represented environment more closely than previous years, allowing for optimization
  - Created GD&T drawings, ensuring proper tolerance stackup through anodization
- Created adjustable secondary clutch to test the effect of different belt bend radii on transmission efficiency
- Redesigned engine dynamometer with robust testing procedure to measure power curve for transmission tuning
- Reduced weight of throttle bracket while improving rigidity, eliminating former issue of bending

Creative Engineering, Mechanical Engineering Design Intern, Bronxville, NY   June 2025 – August 2025
- Designed gearbox, driveline, clutch, 20+ plastic housings for functioning educational turbine assembly in SolidWorks
- Developed a 6 foot tall interactive educational wind turbine model for museum use, transforming initial client requirements into a fully working model in 10 weeks, presenting design to client and senior engineers every week
- Integrated electrical components into mechanical design, creating hidden spaces to store boards and manage wires
- Incorporated feedback from clients and senior engineers to develop designs optimized for weight, manufacturability
- Operated and maintained print farm, producing and finishing parts for military prototypes and educational turbine

FIRST Robotics Competition Team 2638, **Leader of Build & Design**, Great Neck, NY   September 2022 – June 2024
- Fully designed 2024 robot, focusing on mechanism simplicity eliminating previous 15% breakdown rate
- Led team of 100+ members in creation of two unique 125 lb robots by prototyping and iterating dozens of designs
- Qualified for World Championship all 4 years through thorough process documentation and STEM impact
- Created and taught CAD (Inventor) course used by hundreds of students on Long Island and across four countries
- Mentored and developed 50+ new team members each year with design and hands on machining skills

FIRST Lego League Program, Teacher's Assistant, Great Neck, NY   October 2023 – February 2024
- Created activities for 40 elementary students to foster team building and collaboration
- Taught students mechanical principles while guiding them to build Lego robots for competition

YES Network, Freelance Designer, Stamford, CT   June 2023 – April 2024
- 3D modeled and fabricated set pieces used in Yankees pregame shows and interviews reaching an audience of 9 million through network coverage in the northeast, as well as 2.2 million worldwide through social media

Tanenbaum Family Pool, Deck Assistant, Queens, NY   May 2021 – September 2021
- Kept pool club clean and orderly and attended to members' needs

INDEPENDENT PROJECTS

Hexapod Robot
- Designed and manufactured 6-legged, arduino controlled robot capable of walking for an hour before recharge
- Programmed inverse kinematics to control leg position, mapping the legs and body to 3D coordinates

SKILLS & AWARDS

Skills: Parametric CAD (Solidworks), ANSYS Mechanical FEA, DFMA, CNC, Hand Tools, Matlab, 3D Printing

Awards: Baja SAE Arizona 2025 and Maryland 2025 Winner, FIRST Robotics World Championship's Engineering Inspiration, Great Neck Public Schools' Technological Excellence for the Betterment of the Community