

ALEX (ALEXANDRA) JENKINS

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EDUCATION

Cornell University, Ithaca NY

Expected May 2026

Bachelor of Science, Mechanical Engineering

GPA: 3.89; Dean's List: Fall '22, Spring '23, Fall '23, Spring '24

Relevant Coursework: Differential Equations/ Linear Algebra/ Statics/ Thermodynamics/ Dynamics/ Mechanical Synthesis/ Fluid Mechanics/ System Dynamics/ Material Mechanics/ Automotive Engineering/ Propulsion/ Heat Transfer

TECHNICAL EXPERIENCE

Combat Robotics @ Cornell, Ithaca NY, *Sportsman Subteam: Mechanical Engineer*

October 2022-Present

- Designed, fabricated, and tested 3 competition-ready 12lb combat robots, achieving successful entries in the National Havoc Robot League (NHRL) by leveraging precision engineering and control optimization.
- Developed advanced drivetrain and chassis designs using CAD tools (Fusion 360), conducting finite element analysis (FEA) to reduce weight by 15% while maintaining structural integrity under high-stress conditions.
- Prototyped over 40 components through rapid manufacturing methods, including 3D printing, laser cutting, and CNC machining, ensuring reliability under 30+ lbs of competition-induced forces.
- Implemented modular designs that reduced assembly time by 40% and enhanced adaptability for 3 distinct competition scenarios
- Researched and Prototyped an unusual drivetrain called a shuffler mechanism that uses offset cams and friction to propel its way forward giving the team a weight bonus(+6 lbs) so that it can be a more effective control robot
- Led troubleshooting and testing phases, identifying and resolving 5+ critical mechanical failures to improve performance consistency by 25% during high-stakes competitions.

Introduction to Civil Engineering, Cornell University, *Teaching Assistant*

September 2023-Present

- Oversaw and taught Lab activities in the Bovay Laboratory to first year students about welding, grinding, axial loads, tension and compression, wood deflection, 3D modeling and concrete mixtures

Bovay Laboratory, Cornell University, *Student Research/Lab Assistant*

August 2024-Present

- Designed and fabricated custom assemblies using Fusion 360 for projects involving wood, steel, aluminum, and concrete, supporting a variety of research and teaching needs.
- Enhanced and maintained laboratory facilities through prototyping and fabrication, ensuring functionality and efficiency for ongoing projects.

Merrill Sailing Center, Ithaca NY, *Sailing Instructor/Mechanical Technician*

Oct 2022-Present

- Instruct students in sailing techniques, navigation, and safety procedures while maintaining and repairing boat motors, rigging, and equipment to ensure operational reliability and a safe learning environment.
- Perform routine maintenance, troubleshooting, and mechanical repairs on the fleet, including hulls, sails, and motorized components, while fostering an inclusive learning environment that adapts to varying skill levels.

LEADERSHIP EXPERIENCE

Sportsman Subteam Lead, Combat Robotics @ Cornell, Ithaca, NY

May 2023-May 2024

- Developed a timeline for the academic year that outlined 10+ goals and deadlines on a meeting-to-meeting basis
- Collaborated with subteam and team leads to foster an inclusive, supportive environment, improving team retention by 20% and enhancing problem-solving efficiency during obstacles.
- Delegated tasks and responsibilities to 6 teammates based on interest and skill proficiency, and provide design for manufacturing guidance to the subteam

Test Box Lead, Combat Robotics @ Cornell, Ithaca NY

January 2023-May 2024

- Oversaw the design and development of a custom test box in Fusion 360, including the creation of a detailed bill of materials, construction, and assembly, ensuring safe and controlled testing environments for 12lb combat robots

SKILLS AND INTERESTS

Design & Analysis Tools: Fusion 360, MATLAB, AutoCAD, SolidWorks, FEA, CFD, Microsoft Systems, Python

Manufacturing & Prototyping: CNC Machining, Manual and Automatic Mills, Manual Lathes, Laser Cutting, 3D Printing, MIG Welding, Band Saws, Sheet Metal Fabrication, Precision Measurement

Soft Skills: Communication, Problem Solving, Collaboration, Leadership, Time Management, Adaptability