# Jamison L. Taylor Jr

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Portfolio: https://bit.ly/3C4R0Fx

## EDUCATION

**Cornell University,** *College of Engineering*, Ithaca, NY **Expected Graduation May 2026**
*Bachelor of Science*, **Mechanical Engineering(MAE)** **GPA: 3.0**
**Cornell University,** *College of Engineering*, Ithaca, NY **Expected Graduation Dec 2026**
*Master of Engineering,* **Mechanical Design and Robotics**
**Clubs/Scholar Programs:** National Action Council for Minorities in Engineering(NACME), Thrive Scholar, Bridges Scholar, Ryan Scholar, National Society of Black Engineers(NSBE), American Society of Mechanical Engineers(ASME)

## CLASSES

**Mechanical Engineering:** Heat Transfer, Advanced Digital Manufacturing, Innovative Product Design via Digital Manufacturing, Mechanical Synthesis and Design, Dynamics,
**Electrical Engineering:** Mechatronics, Design for Physical Interaction
**Business/Entrepreneurship:** Entrepreneurship for Scientists and Engineers, Essentials of Selling, Microeconomics

## SPECIALIZED SKILLS

**Computer-Aided Design:** AutoCAD, Fusion 360, Onshape, Tinker CAD, ANSYS, SOLIDWORKS
**Programming Languages:** Python, MATLAB, Arduino IDE, C++(bare metal)
**Other Apps & Skills:** 3D Printing/Laser Cutting, Machining, Soldering, Bantam Tools

## PUBLICATIONS

**"Improved durability of 3D-printed ear tags for virtual fencing in cattle: Mechanical and field performance."**
James, H., Rial, C., Hull, D., Taylor, J., Nikolaou, T., Boza, J., Giordano, J., & Erickson, D. (2025). Improved durability of 3D-printed ear tags for virtual fencing in cattle: Mechanical and field performance. *Frontiers in Animal Science, 6*, 1643958. https://doi.org/10.3389/fanim.2025.1643958 (frontiersin.org)

## WORK EXPERIENCE

**Mechanical Design and FEA Simulation Engineer:** ***May 2024 - Aug 2024***
Virtual Fencing Start-Up/ Research: Ithaca, NY

- Designed electronic enclosures using **Fusion 360** for new virtual fencing technology to provide a safe, animal-friendly, and cost-effective cattle management solution for farmers in second and third-world countries.
- Conducted 24 **FEA simulations** on **ANSYS** and **Fusion 360** to measure and optimize the factor of safety, material strength, and material usage by simulating the forces of a cow chewing on the enclosure.
- Performed on-farm testing and simulations using three different materials--Nylon 66, Nylon 6, and PLA--ranging from an applied force of 200N to 800N, to identify an ideal prototyping material.

**Manufacturing Training Content Designer:** ***May 2025 – Sept 2025***
Autodesk Design and Make Space: Ithaca, NY

- Produced a series of instructional videos to train students on safe and proper use of manufacturing equipment.
- Wrote scripts and choreographed demonstrations for tutorials covering the mill, lathe, vertical and horizontal bandsaws, and programmable TRAK lathe.
- Collaborated with lab staff to ensure technical accuracy, safety compliance, and clear visual communication for student learning.

**Organic Robotics Laboratory:** ***Jan 2025 – present***
Volumetric Additive Manufacturing 3D Printer: Ithaca, NY

- Designed a mechanical test bed to measure compressibility, torsion, and angular deformation for evaluating the material integrity of printed structures.
- Optimized printing methods by improving consistency in the measurement of resin solutions.

**Manufacturing LAMP Training Assistant:** ***Feb 2025 - present***
Emerson Manufacturing Lab/Learning Studio: Ithaca, NY

- Train engineering students in three-hour sessions on milling and lathe operation.
- Guided students in manufacturing a lamp stand, emphasizing subtractive machining techniques and safety.

**Undergraduate Representative / Event Coordinator:** ***Jan 2023 – Aug 2024***
Cornell Bowers Diversity, Equity and Inclusion Office: Ithaca, NY

- Fostered team camaraderie through planning of group outings and social events outside of the office.
- Orchestrated and managed social events within tight financial constraints and budget limitations.
- Streamlined team communication through improved event organization and planning transparency.

## CLASS PROJECTS

**Mechatronics Robotic Competition:** ***Jan 2024 – May 2025***
Bare Metal C++ Lead: Ithaca, NY

- Programmed the robot in C++ using bare-metal code to control 2 QTI sensors, 1 color sensor, 2 DC motors, and 1 servo motor; implemented a hard-coded path sequence for autonomous navigation and opponent disruption via strategic turns and spinning maneuvers.
- Designed and built an autonomous robot inspired by *Hungry Hungry Hippos*® to collect and secure blocks on a competition board using a 3D-printed jaw mechanism.

**Cornell Mechanical Design Engineer:** ***Jan 2023 - May 2024***
Hydraulic Scissor Lift Project: Ithaca, NY

- Designed a consumer-based product, using **Fusion 360,** capable of moving 20 to 50 pounds of weight efficiently from the ground which enables individuals to lift objects off the ground with ease to decrease strain on their back.
- The product combines elements of a scissor lift, a hydraulic piston, and a dolly to create a practical and portable device for lifting and transporting household items from the ground. Its versatile design makes it suitable for moving various items, addressing the universal need for convenient item transport.
- Built a reverse hydraulic piston to pressurize a fluid to generate a Mechanical Advantage ratio of 9 and performed pressure analysis to ensure mechanical actuation was possible.

## COMPETITIONS/ OTHER PROJECTS

**NSBE Boeing Flight Competition:** ***Feb 2024 - Mar 2024***
Balsa Wood Airplane Design: Atlanta, GA

- Collaborated with three other students to develop a balsa wood glider using aeronautic principles to test my ability to adapt to new design challenges in a new field of engineering.
- Contributed towards the design of the tail by utilizing a conventional tail with a swept-back taper to make the glider lighter, improving tail efficiency, and overall simplifying the tail design.
- Utilized **Fusion 360** and **laser cutting** methods to optimize the design and construction of the glider; presented findings to judges and flight-tested our glider, resulting in a tested flying distance of 30ft.

**NACME Hackathon:** ***Aug 2022***

- Presented a proposal in a team of four aimed at promoting proactive healthcare initiatives. Atlanta, GA
- Created a business plan to support new entrepreneurs in the insurance sector and to establish collaborations with wellness facilities for the development of health packages for clients that encourage healthier lifestyles.

**Three-day STEM Capstone:** ***Mar 2020***
Thrive/ SCS Noonan Scholar: (Virtual)Cambridge, MA

- Collaborated with three peers to create 'Prospect,' an interactive online financial literacy resource. (**Studio.Code**)
- Research leading stocks, computed interest rates, and crafted dynamic data visualizations to later present for future research and development.

**Summer Personal Project:** ***May 2023 – Aug 2023***
Built/Repaired Computers: Alexandria, VA

- Researched and learned how to piece together components of a PC that met the requirements of the buyer
- Repaired computers by optimizing computer processing speeds and swapping out older parts for newer ones

## LEADERSHIP EXPERIENCE/ EXTRACURRICULARS

**CU Empower Mentor & National Society of Black Engineers(NSBE) Mentor** ***Sept 2023 – May 2024***

- Provided one-on-one guidance to three mentees, catered towards career development and personal growth
- Guided mentees to improve planning skills by introducing a sleep and study schedule
- Instructed mentees develop their short- and long-term goals as well as professional- and social- goals
- Helped mentees with professional development and future professional planning

***Senator/Parliamentarian*** **of National Society of Black Engineers (NSBE)** ***Apr 2024 – May 2025***

- Represented the Cornell University Chapter on a local and regional level.
- Cultivated open lines of communication with chapter members to understand their needs and suggestions.

***Upstate Zone Vice-Chair* of National Society of Black Engineers (NSBE)** ***May 2025 – present***

- Oversee and aid in the operations of 10+ universities within the upstate area of the state of New York.
- Organized and hosted the Fall Zone Conference focused on professional development and community building within the upstate zone community, drawing approximately 125 members.
- Coordinate sponsorship outreach, leadership recruitment, and communication channels to strengthen regional engagement and chapter success.