Olivia Tolliver

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY   **Expected May 2027**
Bachelor of Science, Mechanical Engineering | Computer Science Minor

Relevant Courses: Dynamics; Linear Algebra; Thermodynamics; Statics and Mechanics Solids; Physics I & II

RELEVANT EXPERIENCE

Cornell Mars Rover Project Team, *AstroTech Subteam Member*   **Feb 2025 – Present**
- Work on the AstroTech Mechanical subteam, collaborating with engineers, physicists, biologists, and chemists to design and develop an innovative in-situ life-detection lab for the University Rover Competition
- Designed a 3D-printed mechanism attached to the rover's arm to enhance visibility of key tasks performed

HAPPI Lab, *Undergraduate Researcher*   **Mar 2025 – Present**
- Optimize wearable pneumatic turbine system for energy harvesting through walking, using DAQ for analysis
- Fabricate turbine casing with resin printers, iterating designs and materials to balance comfort and wearability
- Test turbine performance under real-world conditions, including walking, running, and lower body exercises

FIRST Robotics Challenge Team, Marist School, *Member*   **Aug 2018 – May 2023**
- Led mechanical design iterations as **Team Captain (2022-23 season)**, achieving top 5% regional performance
- Dedicated 30+ hours weekly to robot prototype development, fabrication, and testing to meet tight deadlines
- Optimized robot design and fabrication using modeling software and assembly drawings to improve efficiency
- Collaborated with software subteam to program and test the robot's autonomous functions for competition
- Transitioned robot drivetrain from tank drive to swerve drive, enhancing maneuverability and driver control
- Conducted extensive research and testing to integrate pneumatics into the robot, enabling precise control

PROJECTS

Health and Wellness App, *Developer*   **May 2024 – Present**
- Developed a mobile app using React Native and Expo to document users' food consumption and acne journey
- Gained experience in front-end development with Firebase authentication and cross-platform debugging
- Designed app features aimed at analyzing user input to identify potential links between food and acne triggers

ADDITIONAL EXPERIENCE

Girls Who Code, Marist School, *Co-President/Founding Member*   **Aug 2021 – May 2023**
- Spearheaded creation of Redbook, a custom website digitizing 80% of school safety protocols for 100+ faculty
- Designed curriculum for 15+ members with a focus on HTML and CSS, increasing project completion by 40%
- Organized coding workshops and hackathons, expanding student engagement in programming and web design

Robotics Team, Christ the King Catholic School, *Coach/Mentor*   **Aug 2021 – Feb 2023**
- Mentored 15 middle school students, improving competition readiness by 40% through hands-on practice
- Led instruction in Java programming, 3D modeling, and engineering principles, fostering skill development

REACH for Excellence, Brookhaven, GA, *Teacher's Assistant*   **Jun 2020 – Jul 2023**
- Produced interactive computer programming and robotics curriculum for ~120 middle school students
- Assisted teacher in planning Python and Java classes, increasing student engagement in programming by 35%

CAMPUS INVOVLEMENT

Bowers CIS Student Services, Cornell University, *Administrative Assistant*   **Jan 2024 – Present**
National Society of Black Engineers, Cornell University**,** *Member*   **Aug 2023 – Present**
Society of Women Engineers, Cornell University**,** *Member*   **Aug 2023 – Present**
The Cornell Tradition, Cornell University, *Fellow*   **Aug 2023 – Present**

SKILLS

Software: Fusion 360, Onshape, Autodesk Inventor, SolidWorks, Java, React Native, HTML, CSS
Manufacturing: Bandsaw, Drill Press, Rivet Gun, 3D Printing, Soldering, Technical Drawings, DFA, DFM