

GABRIELLE CONARD

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SUMMARY	Robotics Engineering M.S. student passionate about designing robots from top to bottom with experience in mechatronics and PCB design, classical and modern control theory, dynamics modeling, and bridging the gap between simulations and physical robots.
EDUCATION	Worcester Polytechnic Institute , Worcester, MA Master of Science in Robotics Engineering May 2023 (Expected) – Overall GPA: 4.00 Lafayette College , Easton, PA Bachelor of Science in Mechanical Engineering, Minor in Physics June 2021 - Overall GPA: 3.96 (Summa Cum Laude, Honors in Mechanical Engineering)
SKILLS	Software: Python, ROS, MATLAB, Arduino, Java, Git, Webots, SolidWorks, Inventor, Fusion 360, Creo, GibbsCAM, Microsoft Word, Excel, PowerPoint Technical: 3D printing, soldering, PCB design, basic proficiency with manual and CNC mills, lathes, and other equipment
RELEVANT EXPERIENCE AND PROJECTS	NSF Graduate Research Fellow Worcester Polytechnic Institute – Worcester, MA Graduate Research Fellow in the Soft Robotics Lab, August 2021 – present <ul style="list-style-type: none">Lizard Team: Investigating methods of enabling a soft lizard-inspired robot to traverse uneven terrain, including mechanical design updates and motion planning developmentQuadruped Team: Developing simulation for a flexible-spined quadruped robotWearable Assistive Device: Designing a wearable device to assist those with hearing loss NASA NIF Intern NASA Langley Research Center – Hampton, VA LANDO Robotics Research and Development Intern, June – August 2022 <ul style="list-style-type: none">Drafted a literature review investigating empirical dynamic modeling techniques and comparing the Lightweight Surface Manipulation System to existing robotic cranesDeveloped Python/MATLAB scripts for deriving serial arm dynamic and energy equationsSupported hardware development Honors Thesis Student (2020-2021) Lafayette College - Easton, PA A Step Forward: Investigating Dynamic Stability in a Low-Cost Quadruped Robot <ul style="list-style-type: none">Developed a simulation environment in Webots for rapid software development and testingImplemented novel control methods for dynamic balancing and disturbance recovery both in simulation and on the physical robot, overcoming the sim2real gapCharacterized IR detectors and custom force sensorsDeveloped basic autonomous navigation to avoid the edge of a table Independent Study and Excel Research Scholar Program Lafayette College - Easton, PA Independent Study Student, Spr. 2020 Excel Research Scholar, January – July 2020 <ul style="list-style-type: none">Constructed a low-cost quadruped robot in preparation for senior thesis projectDesigned custom printed circuit boards, 3D-printed parts, and force sensors in each footDeveloped Python and Arduino software to implement active compliance and walking gaits Clare Boothe Luce (CBL) Research Scholar Program Lafayette College - Easton, PA CBL Research Scholar: Quadruped Robotics Research, June – August 2019 <ul style="list-style-type: none">Developed a quadruped robot based on the open-source project openDog by James BrutonWrote Python scripts using ROS to develop base code and walking mechanismsModified and designed various components of the hip and leg systems
ADDITIONAL EXPERIENCE	Academic Resource Hub Lafayette College - Easton, PA CRLA Level I Certified Physics/Engineering Peer Tutor, January 2018 – May 2021 Supplemental Instructor for Physics I, January 2020 – May 2020