

CARINA ORCUTT

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EDUCATION

Boston University College of Engineering

Boston, MA

- B.S. in Mechanical Engineering, Minor in Biomedical Engineering
- Cumulative GPA: 3.6/4.00
- Related Course Work: Electromechanical Design, Fluid Mechanics, Thermodynamics, Computer Aided Design, Materials of Mechanics, Introduction to Programming, Principles of Molecular & Cellular Biology, Engineering Mechanics (Statics and Dynamics), Manufacturing Process, Business of Technology and Innovation
- Semester Abroad – **University of Sydney**, Australia (Spring 2025), focus in Biomechanics

2023 - 2027

SKILLS & PROJECTS

Programming (MATLAB, Python, Swift, Arduino, Xcode), CAD & Design (SolidWorks, AutoCAD, GD&T), Analysis & Simulation (FEA, COMSOL, Numerical Simulation, Design of Experiments), Fabrication (Laser cutting, 3D printing, Rapid prototyping), Biomechanics & Instrumentation (3D motion capture systems, Wearable sensor integration, Image Analysis), Software (MS Office, Claude)

DanCER – Dance Classification & Exertion Rating iOS App

Sydney, Australia

Internship

Feb 2025 - Jun 2025

- Independently developed an iOS application in Swift/Xcode to quantify dance movement intensity by extrapolating dancers' heart rate data over time to track fitness goals and assist with injury prevention.
- Developed algorithm to classify 50+ dance movements by difficulty and exertion, incorporating age-based calibration; reduced post-session analysis time by ~40% for end users.

Autonomous Line Following Car

Boston, MA

Class Project: Introduction to Engineering Design

Aug 2024 - Dec 2024

- Designed and assembled a vehicle with a custom CAD chassis, integrating DC motors, servo motors, ultrasonic and IR sensors, on/off switches, and LEDs for autonomous navigation and obstacle detection using PID control.

WORK EXPERIENCE

Mechanobiology Engineering Intern

Singapore, SGP

Nanyang Technological University Singapore

Jun 2026 - Present

- -Developing computational image analysis methods to quantify heterochromatin organization and nuclear deformation from fluorescence microscopy data.

Biotechnology Lab Assistant

Boston, MA

Design Automation Manufacturing Processes (DAMP) Labs

Jan 2026 - May 2026

- Programmed and tested OpenTrons liquid handling robots to automate manual laboratory protocols, improving repeatability and efficiency.
- Translated manual biomedical protocols into automated liquid handling scripts to improve reproducibility and throughput.

Biomechanics Engineering Intern

Sydney, Australia

University of Sydney Department of Biomechanics

Jan 2025 - Jun 2025

- Led development of the DanCER iOS app in Swift to translate biomechanics research into a functional movement analysis and exertion tracking tool.
- Integrated and analyzed wearable physiological sensor data in conjunction with calibrated 3D motion capture systems to evaluate biomechanical performance trends in experimental studies.

Administrative Services Coordinator

Brookline, MA

EMME Lash Bar

October 2025 - May 2026

- Coordinate daily bookings and client communications across 6 locations, supporting 100s of clients and service providers while ensuring smooth front of house operations.

CLUBS & ORGANIZATIONS

- Deans Host, Society of Women Engineers, College of Engineering Ambassador, BU EDGE (Dance company choreographer)