

EXPERIENCE & PROJECTS

GRADUATE PROJECTS: M.A. DESIGN ENGINEERING

Providence, RI

July 2026-Present

Self-Directed & Coursework Projects

- Building a cross-disciplinary body of work alongside my graduate studies spanning product design, software, and materials. [Full case studies:](#)
 - **NUDG:** a focus wearable that detects attention drift via 3-contact EEG and responds with a subtle haptic cue; designed the closed-loop system and a detachable haptic core worn as earpiece, necklace, or ring.
 - **RALLY** ([withrally.co](#)): designed and developed a women's sports community web app; first self-taught coding project, built end to end.
 - **Gym Caddy Compliant Hinge:** team project iterating a self-closing living-hinge handle across Prusa and Bambu prints, applying design-for-manufacture principles.

EARLY STAGE CLIMATE TECH STARTUP

New York, NY

May 2025-October 2025

Chief Technical Officer (CTO)

- Led R&D for sustainable material solutions, spearheading the development of biodegradable hydrogels designed for both wildfire prevention and environmentally safe data center cooling, integrating waste derived polymers and cellulose rich byproducts to optimize performance and sustainability.
- Directed operations for material formulation and testing, including prototype development, thermal conductivity analysis, viscosity measurement, durability assessment, and biodegradation trials, ensuring that all solutions met rigorous sustainability, functionality, and scalability standards.
- Coordinated collaboration with partners, suppliers, and investors, aligning technical milestones with strategic commercialization goals; facilitated knowledge exchange between scientific, engineering, and business teams to drive implementation and real world adoption of materials solutions.
- Research and work foundations led to company successfully raising \$250,000

URBAN GOURMET FARMS

Charlotte, NC

March 2025-June 2025

Farm assistant and Laboratory Manager

- Assisted in the full cultivation lifecycle of gourmet mushrooms in a controlled indoor farm environment, overseeing substrate preparation, inoculation, incubation, fruiting, and harvesting to ensure consistent, high-yield production.
- Managed laboratory operations by implementing sterile technique protocols, conducting spawn transfers, tracking mycelium growth, and controlling contamination to maintain optimal conditions for fungal propagation.
- Maintained and monitored farm infrastructure, including HVAC and humidity systems in shipping container grow rooms, while contributing to ongoing R&D initiatives focused on substrate innovation and sustainable cultivation practices.

WEREWOL

Brooklyn, NY

January 2024-December 2024

Research Associate

- Optimized wet spinning solutions and processes for bio-polymer fibers by enhancing the chemical compatibility of protein-incorporated base fibers, ensuring suitability for knit and woven fabric applications. Aided in the design of custom parts for 1 of 1 wet spinning line.
- Conducted material characterization, including tensile testing, rheology, differential scanning calorimetry (DSC), and color stability analysis, to enhance the mechanical and thermal properties of biopolymer fibers.
- Designed and executed experiments to improve fiber morphology and performance, leveraging data-driven decision-making and utilizing Azure Data Lake for R&D data storage and management.
- Collaborated with cross-functional teams to scale up fiber development, integrating chemical processing improvements with textile manufacturing and customer requirements.
- Experience ended due to company closure.

3D PRINTED PORE GEOMETRIES FOR SKELETAL STIFFNESS MATCHING

Columbus, OH

January 2023-December 2023

Researcher

- Spearheaded research and development for the use of Nickel Titanium for implants. Chose and designed appropriate pore geometry to mimic bone density for initial testing.
- 3D modeled and simulated behavior before adjusting design to optimize compressive and torsional performance. Increased simulated property performance of the model before 3D printing for validation and confirmation of the simulated behavior. Confirmed performance through testing and presented findings.
- Designed and tested resource-efficient materials with tailored pore geometries, improving performance while reducing waste in manufacturing processes

CIRC

Danville, VA

May 2023-August 2023

Process, Innovation, and Laboratory Intern

- Developed advanced polymerization techniques for recycled PET production, achieving a 40% improvement in product composition and contributing to sustainable circular economy practices.
- Enhanced method development for recycled PET validation and characterization using differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), rheology, end-group analysis, and colorimetry to ensure product quality and consistency.
- Collaborated with interdisciplinary teams to solve complex chemical processing challenges, ensuring timely delivery of high-quality recycled PET materials.

CENTER FOR CANCER ENGINEERING

Columbus, OH

June 2022-May 2023

Undergraduate Researcher

- Contributed to in-vitro extracellular matrix replication through the utilization of collagen-alginate hydrogels for cancer metastasis research
- Performed comprehensive assessments including stiffness, hydraulic permeability, and turbidity testing on the hydrogels.
- Used data integration techniques to store experimental results and provide holistic understanding of replication results.

EDUCATION

BROWN UNIVERSITY & RHODE ISLAND SCHOOL OF DESIGN

Master of Arts, Design Engineering

THE OHIO STATE UNIVERSITY

Bachelor of Science, Materials Science and Engineering; Minor in Art

Providence, RI

2026-Present

Columbus, OH

2019-2023

SKILLS

Design Engineering: React, TypeScript, JavaScript, HTML/CSS, Tailwind CSS, Vite, Component-Based UI, Design Systems & Design Tokens, Interactive (Coded) Prototyping, Front-End Engineering, Typography & Type Pairing, Git / Version Control

Full-Stack Development: Node.js, Express.js, Server-Side Rendering (SSR), REST API Development, PostgreSQL, Prisma (ORM), Database Schema Design, Supabase, Authentication Flows, Socket.io / Real-Time Systems (WebSockets), SQL

Design & Visualization: Figma, Adobe Creative Suites, Data Visualization, Visual Storytelling, 3D Modeling, Prototype Design, Technical Writing

Materials Science & Simulation: Finite Element Analysis, COMSOL, MATLAB, SolidWorks, 3D Printing, Materials Characterization, Microscopy, Chemical Processing, Technical Feasibility, Product R&D

Process & Collaboration: Project Coordination, Process Optimization, Quality Assurance, Vendor Relations, Stakeholder Engagement, Problem Solving, Sustainability Metrics Optimization, Circular Economy, Textile Recycling, Microsoft Office Suite