Natalia Escobar

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EDUCATION

Brown University/Rhode Island School of Design — **Providence, RI**
Master of Arts in Design Engineering — *Expected May 2024*
Duke University — **Durham, NC**
Bachelor of Science in Physics | Minor in Computer Science — *May 2022*

PROJECT EXPERIENCE

Coro | *Integrate and Implement* — **Brown University**
Group Project: 3 Members — *February 2025-Present*

- Developed a wearable band that uses tactile sensory cues to amplify/prompt movement cues during group fitness classes for users with audio accessibility needs
- Led product prototyping using I2C-based wireless communication modules, refining both instructor and participant interfaces through iterative design cycles
- Conducted extensive research interviews with group fitness instructors and experts in creating accessible classroom environments for people who are hard of hearing, synthesizing results and ideating alongside UX Designer and Industrial Designer to create a wearable solution within the context of the project

Sproutopia | *Design Engineering Communication* — **Brown University**
Group Project: 4 Members — *January 2025*

- Developed an innovative, interactive experience exploring the intersection of food systems, environmental impact, and sustainable agriculture
- Collaborated with a biologist, UX designer, and engineer to align scientific accuracy with intuitive user flow and branded aesthetic
- Created a visual identity, such as a style-guide and hand-drawn visual assets, and product story to align with client's brand values and enhance consumer engagement

How Might We Minimize Impact Force in Collisions? | *Design in Nature* — **Rhode Island School of Design**
Individual Project — *October 2024 - Present*

- Led the end-to-end development of a structural solution inspired by turtle shell microstructures to improve impact force redistribution during vehicle collisions
- Used Fusion 360 and nTopology to model manufacturable geometry based on SEM-captured biological structures, translating nature into engineered design
- Performed Finite Element Analysis (FEA) and mechanical testing to evaluate and validate mechanical performance, supporting feasibility for future prototyping and scale-up

ChopSmart | *Iterating with Intention* — **Brown University**
Pair Project — *October 2024 – December 2024*

- Designed and developed a modular smart cooking device through cross-functional collaboration with an industrial designer, implementing structured design controls including ideation, requirement definition, and project timeline management
- Conducted targeted user interviews to define quantifiable user requirements, translating findings into verifiable design inputs and performance specifications
- Implemented iterative design verification testing and user feedback analysis to systematically refine functionality when prototyping, documenting performance against predefined specifications
- Integrated Raspberry Pi 5 to power and house the digital component and programmed with Python to support 3 AI systems: OpenAI GPT-4o for logic processing, PicoVoice Jaguar for speech recognition, and Google Gemini for audio-output

SKILLS

Product Development & Design: Design Thinking, Rapid Prototyping, User Research, Usability Testing, Brand Identity, Packaging Concepts, and Wireframing
Digital:, Fusion360, SolidWorks, nToplogy, Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Figma, Python, Java, C, MATLAB, ROOT, HTML, CSS, Raspberry Pi Integration
Prototyping and Fabrication: Hands-on experience with mechanical prototyping, textile processes (fiber identification, dyeing with natural pigments, MX acid, and disperse dyes), and smart device integration
Soft Skills: Creative Ideation, ; Cross-Disciplinary Collaboration, Technical Documentation, Problem-Identification, Problem Solving, User-Centered Mindset, Attention to Detail, Adaptability
Languages: English (Fluent), Spanish (Fluent), and French (Proficient)