

# Sanjana Subramanian

## Columbia University, Mechanical Engineering

ss6169@columbia.edu | sanjanasubr.com | linkedin.com/in/sanjanasubr | 240-274-4216

Product designer & engineer with expertise in bringing consumer products from concept to manufacture. I thrive as the interface between technical, creative, and practical ideas during human-centered design and development processes.

## ★ Experience

### Systems Engineer, Amazon Robotics New York, NY | Process Optimization | September 2024

The robotics deployment team at Amazon is responsible for optimizing technology systems in fulfillment centers.

- Designed and delivered large-scale automation tools for internal stakeholders that improved accuracy by 3% and are projected to save \$300K/year per program.
- Partnered across design, software, and operations to ensure usability and scalability of internal products.

### Design Engineering Intern, PENSA Brooklyn, NY | Design Firm | Jun 2023 - Sep 2023

An office furnishing company asked PENSA to design a lactation pod for working mothers.

- Developed photorealistic renderings and physical mockups for biweekly client design reviews, emphasizing manufacturability and ergonomic ability across diverse user scenarios.
- Designed refrigerated, two-way milk locker balancing thermal performance and privacy for working parents.

### Lead Design Engineer, MOBY Tag Columbia University Senior Thesis | Sep 2023 - Mar 2024

Data collection is vital in whale preservation. MOBY is a non-invasive, long-term data tag equipped with live video feed, novel speed sensing, and on-board energy regeneration.

- Designed waterproof tag housing and modular electronics enclosure to meet field-testing standards.
- Converted conceptual sketches into manufacturable CAD files; fabricated and tested physical prototypes.
- Developed and implemented test protocols to validate mechanical durability, animal safety, and data transmission.

### Structures Lead & Project Manager, EWB: Morocco Columbia University | Nonprofit | Sep 2020 - Jan 2023

We built a three-tank, 100,000L water filtration and delivery system alongside two communities in Ait Bayoud, Morocco. I served a team of 50+ people in NYC and Ait Bayoud as pre-trip construction PM.

- Led CAD development, construction planning, and material sourcing.

### UX Fellow, Design@Columbia x Google New York, NY | Google UX Design Sprint 1st Place | Apr 2024

I co-designed *Mona*, a museum collections platform focused on accessibility and intuitive information sharing.

- Led research, prototyping, and stakeholder presentations in a four-week Google UX sprint.

### The Robot Doorman Project, Columbia Engineering New York, NY | Speech Recognition | Fall 2022

For a *Fundamentals of Speech Recognition* course, I built a speech-controlled access system on a microcontroller.

- Integrated custom organic humanoid CAD housing with embedded voice interface; explored biometric prompts and responsive feedback.

### Engineering Intern, Natural Machines Barcelona, ES | 3D Food Printing | May 2022 - Aug 2022

3D Food/Pharmaceutical Printing

- Designed and prototyped a machine add-on to prep and homogenize ingredients for 3D food printing.
- Led packaging redesign for modular machine add-ons with a focus on food safety and sustainability.

## ★ Skills

### Design/Product

Data-Driven Product Design, User-Centered Strategy, Competitive Analysis, Cross-Functional Commercialization, Design Process, Interaction Design, UI/UX, Rapid Prototyping, Wireframing, Design Review, Rapid Prototyping

### Tools & Coding Languages

Lean/Six Sigma Yellow Belt, Figma, Origami, Miro, Blender, Adobe Illustrator/Photoshop, HTML/CSS, 3D Printing, Laser Cutting, CNC Machining, Makerspace Tools, Python, Java, C++, MATLAB, SOLIDWORKS, Fusion 360, AutoCAD

### Engineering

BOM Ownership, FEA, Assembly Instructions, Tolerancing, Prototyping Hardware/Software, Embedded Systems/IoT

## ★ Award Winning Work

“The MOBY Tag” (2024), Columbia University Senior Design “Best in Design/Engineering” Award