Sanjana Subramanian

Columbia University, Mechanical Engineering '24

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Engineer and designer with real-world PM experience in hardware and software product development. I thrive as the interface between technical, creative, and practical ideas during the design and development process.

★ Experience

Lead Designer & Product Manager, MOBY Tag   Columbia University Senior Design Thesis | 2023-2024

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.

- Led user research and stakeholder design reviews with ten active oceanography and cetacean experts.
- Implemented and lab-tested embedded systems architecture for live video and tag-to-app satellite communication.
- Interfaced between hardware, software, safety, and testing sub-projects to produce a HiFi prototype.
- Prototyped and developed workflows for hardware, software, and web UX.

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

We built a 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 50+ person international team in system testing, construction, and integration.
- Led 5 person structures team in developing a safe and user-centered tank maintenance system.
- Developed a continued education program to encourage culturally sensitive, community-informed design.

UX Fellow, Design@Columbia x Google   New York, NY | Google UX Design Challenge | 2024

Mona is an intuitive, collaborative, and accessible museum collections management system.

- Led UI/UX design and user research. Pitched HiFi prototype for a Google UX design sprint.

Product Design Engineer Intern, PENSA   Brooklyn, NY | Design Firm | 2023

A uniform management company asked PENSA to design a solution that would increase hanger return rate, increasing sustainability scores and reducing revenue loss.

- Held user interviews to determine project KPIs and guide stakeholder journey mapping.
- Created six prototypes with the design team to evaluate usability and system integration efficiency.
- Coordinated biweekly client progress reports.

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

For the *Fundamentals of Speech Recognition* course, I adapted AI-powered speech recognition systems to fit on the Adafruit Circuit Playground Bluefruit microcontroller.

- Integrated speech recognition system with a physical housing to create an interactive digital doorman.
- Developed organic humanoid (pelvis, head, spine) CAD designs for physical housing.

Engineer Intern, Natural Machines   Barcelona, ES | 3D Food Printing |2022

3D Food/Pharmaceutical Printing

- Designed and prototyped a machine add-on to prep and homogenize ingredients via ultrasonic vibration.

★ Skills

Engineering

Finite Element Analysis, Tolerancing, Prototyping Hardware/Software, Embedded Systems/IoT, Speech and Speaker Recognition, CAD

Design/Product

Product Management, User-Centered Strategy, Ethnographic Study, Competitive Analysis, Design Process, Interaction Design, Data Visualization, 2D/3D Visualization, UI/UX, Rapid Prototyping, Wireframing, Design Review, Rapid Prototyping

Coding Languages & Tools

Python, Java, C++, MATLAB, SOLIDWORKS, Fusion 360, AutoCAD, Blender, Keyshot, Figma, Origami, Miro, Adobe Illustrator/Photoshop, 3D Printing, Laser Cutting, CNC Machining, Makerspace Tools

★ Award Winning Work

"The MOBY Tag" (2024), Columbia University Senior Design "Best in Engineering" Award