

MATIAS LEE

matiasrlee@gmail.com
makermatias.my

EXPERIENCE

Design Engineer/Makerspace Director - NuVuX

Aug 2022 - Jun 2024 | Lakewood, CA/Cambridge, MA

- Overhauled design and engineering documentation and criteria which I used to create over 10+ extensive onboarding programs.
- Engineered functional prototypes integrating Arduino controlled displays, ultrasonic distance sensors, flex sensors, and servo motors, ensuring modularity for user customization and iterative development for wearable technology, ocean cleaning robots, and future transportation.
- Led industrial design projects from concept to completion, including sketching, prototyping (paper, cardboard, wood, and 3D printing), and final product development using Blender and Adobe Illustrator, with a focus on functional automotive designs, furniture, and structural systems.
- Managed the launch and operations of a \$1M makerspace, transforming it into a self-sustaining facility serving 200+ users daily, while improving efficiency by \$100k annually through optimized resource allocation, equipment maintenance, safety protocols.

Mechanical Design Engineer - Upwork/Optivolt Labs

Mar 2021 - May 2022 | Remote

- Developed hinge mechanisms for solar scooters and battery packs from, designing CAD (Fusion 360) assemblies for manufacturing.
- Designed PCBs from Arduino/Raspberry Pi prototypes, to interface displays with buttons and infrared sensors.
- Designed and prototyped a modular surf/ski/bike rack using a slot and latch mechanism, FEA tested for 1000 lbs of load.
- Using sheet metal DFM/DFA principles, collaborated with manufacturers to bend and weld 4 ft of stainless steel to deliver high performance racks, designed to withstand saltwater wear tear, high velocity vibrations, and fit harmoniously with existing van models.
- Designed brutalist stainless steel art frames for a modern artist using bent and welded sheet metal DFM/DFA principles.

Product Development Hardware Engineer Intern - Brain Corp

Jun 2020 - Dec 2020 | San Diego, CA

- Designed and developed sheet metal mounts and injection-molded shrouds for an angle and height adjustable LiDAR sensor, collaborating with manufacturers using DFM/DFA and GD&T principles for 50+ prototypes.
- Rapid prototyped the hinge mechanism of foldable inventory scanners using 8020 aluminum extrusions, hardware, and 3D printed parts.
- Programmed in SSH to integrate machine learning AI (Donkey) and real-time object/human recognition software (TensorFlow) for autonomous vehicles that avoid human and object obstruction.
- Conducted Thermal Testing on product prototypes using probes to log data into a temperature map when the device is heated.
- Increased efficiency of 3D printer lab by coding an automatic online queue and convincing upper management of investing in another printer using cost benefit analysis.

Design Engineer Intern - EnVision Makerspace/Birch Aquarium

Mar 2018 - Mar 2020 | La Jolla, CA

- Designed a 3D printed silicone mold using CAD modeling in SolidWorks and 3D mesh sculpting Blender, to create ergonomic VR headsets.
- Created a weight assisted, top mounted, pull down periscope using a dampened pulley mechanism.
- Prototyped an illuminated water sprout using Arduino controlled RGB LED and laminar flow fiber optics using fluid mechanics.
- Research and Developed Augmented Reality transparent displays, experimenting with OLED, projection, and holographs.
- Led a multidisciplinary team of 12 engineers, UI/UX designers, and coders through the development of innovative design challenges.

EDUCATION

M.S. Integrated Design Business and Technology

USC Iovine and Young Academy | *On Leave*

B.S. Mechanical Engineering | **UC San Diego** | 2016 - 2021

Minor in UI/UX Design & Education

Study Abroad experience in University of Copenhagen

A.S. Woodworking: Furniture | **Cerritos College** | 2021 - 2023

SKILLS

Design

- Solidworks
- OnShape
- NX
- Blender
- Adobe CC
- Figma
- Bezi

Manufacturing

- DFM/DFA
- FDM/SLA 3D Printing
- Laser Cutting
- Sheet Metal
- Injection Molding
- Silicone Molding
- Woodworking
- CNC

Programming

- Java
- Python
- C++
- Arduino
- Raspberry Pi
- MATLAB
- Unity
- Unreal Engine