Juliana Covarrubias

juli1cov@mit.edu | (562) 685-1779

EDUCATION

Massachusetts Institue of Technology
Cambridge, MA | Sept. 2020 - May 2024
Major: Mechanical Engineering , Concentration in EE/CS (Course 2A-6)
Minor: Design (Course 4B)
GPA: 4.9/5.0

PUBLICATIONS

[1] Yip Fun Yeung, Fangzhou Xia, **Juliana Covarrubias**, Mikio Furokawa, Takayuki Hirano, and Kamal Youcef-Toumi "Robotic Condition Synthesis of Rotary Machines: Method and Instrument," *2023 IEEE International Conference on Robotics and Automation (ICRA)*, 2023, submitted

PROFESSIONAL EXPERIENCE

MIT Mechatronics Research Lab
Mechanical Design and Manufacturing Experience for
Intelligent System
Cambridge, MA | Summer 2022 - Present
Designed and fabricated physical elements of test rig for injecting and measuring faults onto rotating shafts.

Designed a rotating peg system for precision robotic arm training

MIT Synthetic Neurobiology Group
Development of Neuroengineering Teaching Tool
Cambridge, MA | Summer 2021 - Winter 2021
Programmed educational Unity video game learning aid for course, MAS.881 "Principles of Neuroengineering"
Implemented custom data structures for progress tracking
Organized playtesting with MIT biology graduate students

MIT Media Lab | Responsive Environments Group
Electronic Skin as Sensate Media
Cambridge, MA | Fall 2020 - Winter 2021
Developed machine vision light blob detection for AR projection app
Built and programmed dynamic LED display matrix for 3D visualizations

LEADERSHIP

FIRST Robotics Team 7042: Poly Rabbotics
Founder, Team Captain, Electrical and Programming Lead
Long Beach, CA | Fall 2017 - Spring 2020

RELEVANT COURSEWORK

- Mechanics and Materials I
- Dynamics and Controls I
- Dynamics and Controls II
- Thermo-Fluids Engineering I
- Design and Manufacturing I
- Differential Equations

- Electronics for Mechanical Systems
- Model and Design of Electrical Circuits
- Numerical Computation for Mechanical Engineers
- Fundamentals of Programming

- Design Studio: How to Design
- Design Studio: Design Techniques and Technologies
- Design Studio: Objects and Interaction
- Design Computation: Art, Objects, and Space
- Foundations in Art, Design, and Spatial Practices

SKILLS

Programming:
Java, C#, Unity, Python, MATLAB, HTML/CSS, Processing 4, Arduino

Modeling:
SolidWorks, Rhino7, 3ds Max

Design:
Adobe Illustrator, Procreate, Adobe Premiere Pro, Lightworks

Machining:
Lathe, Mill, Laser-Cutting, 3D-printing, Water Jetting, Wood & Metal Shop Tools