

# Kiran Shirish

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## EXPERIENCE

### Exact Sciences

Davis, CA

*Engineering Intern - Service and Support*

*Jun 2024 - Sept 2024*

- Rapidly designed and engineered custom camera mounts for liquid handling systems
- Established a robust asset tracking system to manage inventory of service workshop
- Analyzed and modified scripts of tumor imaging device to diagnose and fix errors

### Passerini Laboratory

Davis, CA

*Undergraduate Researcher*

*Jun 2023 - Jun 2025*

- Innovated new equipment to reduce experimental error due to faulty equipment in lab
- Executed protocols such as Western Blot, PCR, Flow Cytometry, and Cell Subculture
- Leveraged engineering first principles to engineer microfluidic flow chambers

## EDUCATION

### University of California at Davis

Davis, CA

*Biomedical Engineering, B.S.*

- Regents Scholarship Recipient | University Honors Program
- Activities and Societies: Biomedical Engineering Society, Regents Scholars Society
- Relevant Coursework: Biomolecular Engineering, Signal Processing, Neurobiology, Neuroengineering, Rapid Prototyping, Instrumentation, Data Analysis, Machine Learning for BME

## PROJECTS

### PneuMotion - Senior Design Capstone Project

Davis, CA

*Co-lead Engineer*

*Sept 2024 - Jun 2025*

- Created orthotic device for patients with brachial plexus injury to regain arm function
- Documented full design process with **FMEA** and **verification/validation testing**
- Prototyped device using 3D printed frames, slider crank mechanism, and gas strut

### Breast Cancer Classification Model – UC Davis

Davis, CA

*Lead Engineer*

*Mar 2025 - Jun 2025*

- Built a convolutional neural network classify breast tumors from ultrasound images
- Utilized Python to preprocess data, train models, and evaluate performance metrics
- Optimized F1 score by tuning model and applying data augmentation techniques

### Pill Splitter - Make-A-Thon 2025

Davis, CA

*Design Team Member*

*Jan 2025*

- Designed a self-aligning pill splitter for patients with neuropathy and blindness
- Developed CAD models and manufactured functional prototype in under 48 hours
- Awarded **Most Creative Prototype** out of 15 teams for final presentation of model

### Laminar Flow Chamber - Passerini Lab

Davis, CA

*Lead Engineer*

*Dec 2023 - Oct 2024*

- Utilized fluid dynamics principles to design laminar flow chamber for microfluidics
- Modeled and manufactured prototypes with CAD, SLA 3D Printing, and CNC milling
- Eliminated multiple large sources of experimental error with improved design

### DNA Extraction Camera Mount - Exact Sciences

Davis, CA

*Lead Engineer*

*Jul 2024 - Sept 2024*

- Engineered custom camera mounts monitoring **1000+ cancer genomic assays** per day
- Utilized CAD Software to develop multiple prototypes incorporating client feedback
- Finalized design, proceeding to manufacture and install **12+** camera mounts in the lab

## SKILLS

Software: Python, Java, Matlab, VBA, Solidworks, Circuit Design, OpenVibe, LabVIEW

Hardware: Arduino, Cell Culture, Sterile Technique, Rapid Prototyping, Machining, Microfluidics