Alec Perkins

(650) 995 - 3848 • Goleta, CA • **work**: alecperkinsw@gmail.com • **school**: alecperkins@ucsb.edu

PORTFOLIO: alec-perkins.github.io/portfolio

WORK EXPERIENCE

Undergraduate Research Assistant - Begley Research Group May. 2024 - Present

College of Engineering | UC Santa Barbara, CA

I use the FEA tool ABAQUS to conceptualize, develop, and analyze three dimensional models of 3D-printed lattice (meta) materials. I document each of my projects with presentations overseen by M.E. Professor Mathew Begley and Patrick Ziemke (postdoctoral research advisor). These presentations are to be used to repeat, replicate, and expand on the structural analyses.

The Coder School Code Coach & Lead Python Camp Instructor Jun. 2021 - Jul. 2022

The Coder School | San Mateo, CA

Responsible for tutoring children ages 8 - 16 in various back-end and front-end programming languages. Additionally responsible for leading and developing curriculum for 14-student summer coding camps.

Macrometa Resilience Team Internship Jun. 2021 - Aug. 2021

Macrometa Corporation | San Mateo, CA

Member of the "Resilience Team" primarily writing a JSON creating and parsing program in Google's Golang aimed at creating JSON files that met clients' size requirements. Participated in meetings with global team members; from LA, India, and Bulgaria; developing skills in Golang, Python, and JSON.

IPMD, Inc. ATMA Project Internship Dec. 2020 - Jun. 2021

IPMD, Inc. | San Mateo, CA

Worked as a Full Stack Intern with the Project ATMA team as well as a web app programmer, contributing to the creation of back-end processes in Python and front-end design. Additionally, managed the EC2 (AWS) systems for the team, created an automated email server, and helped the team move to app development.

PROJECTS

Spring-Mass System Simulation - MATLAB Oct. 2023 - Nov. 2023

In order to practice simulating real world physical situations using mathematical analysis in MATLAB, I modeled a system of two masses and three springs connected in alternating seriesThe system is initially at rest in equilibrium and then set in motion by displacing the masses arbitrarily. In order to simulate this type of movement, eigenvalue and eigenvector analysis was used to create equations for motion which was later plotted in MATLAB.

Phone to Microscope/Telescope Eyepiece Mount with Two-Axis Linear Actuation Apr. 2023 - June. 2023

This project was created to assist in taking high-quality photos through a microscope or telescope eyepiece with a cellphone. The mount fastens to the eyepiece and cellphone while the x-axis and y-axis positions can be adjusted with a wireless remote to adjust either of the two stepper motor linear rail actuators in order to get the phone lens lined up perfectly with the eyepiece.

Wood and Cable Tensegrity Chair Jan. 2022 - Jun. 2022

I constructed, sanded, and tested a special kind of chair (Tensegrity Chair) that appears to be floating without support but uses illusion and static physics's forces as well as internal force calculations for the load to be fully supported and balanced by each force of compression and tension in the cables and a steel turnbuckle joining the top and bottom half of the chair together. I then tested the load of the turnbuckle by incrementing the weight applied to the chair until failure of the turnbuckle.

EDUCATION

The University of California, Santa Barbara | IP: Bachelor of Science, Mechanical Engineering Expected Jun. 2026

Cumulative GPA: 3.5 | UCSB C.O.E. Honors Program

RELEVANT SKILLS

FEA - ABAQUS | Material Research | MATLAB | CAD - SolidWorks | HTML | CSS | JavaScript | Machining | CNC | Python | Teaching