KAREN HINH | MECHANICAL ENGINEER

khinh@olin.edu (925) 900-8470 linkedin.com/in/karen-hinh karenhinh.myportfolio.com

EXPERIENCES

Apple | **Battery Testing Intern**

May – August 2022 *San Jose, CA*

- Developed Python data analysis scripts to extract parameters and conclusions from cell thermal abuse test data
- Created ANSYS transient thermal model to predict cell behavior under thermal abuse, used test data for model correlation
- Designed and built a new test fixture for cell thermal abuse testing
- Root-caused errors from pressure sensor output and proposed new calibration methods to mitigate errors

Apple | **Product Design Intern**

May – August 2021 *Santa Clara, CA*

- Designed, assembled and tested belt-drive mechanism with 90° of rotation
- Conducted modal and structural analysis in ANSYS for mounting brackets
- Set up and collected data from thermal testing to corroborate CFD model

Olin Formula SAE | **Mechanical & Battery Team Lead**

September 2019 – June 2022 *Needham, MA*

- Led battery and mechanical team in onboarding new members, completing full design cycles and preparing for competition during / post-COVID
- Characterized segment thermal behavior with forced air cooling using CFD modeling in SimScale & MATLAB
- Designed, analyzed & fabricated mounting system for HV pack to ensure hardware can withstand 15kN load in all directions

Swift Solar | **Data Engineering Intern**

January – May 2021 *Remote*

- Full-stack development from scratch for a data management system, with front-end custom UI for data input, Django back-end for batch data analysis
- Developed automated Python data analysis scripts to process solar cell characterization data

UCP Biosciences | **Mechanical Engineering Intern**

June – *July 2018* *San Jose, CA*

- Designed drug-testing strip incubator for R&D department
- Quickly ran through iterations of rapid prototypes as proof of concepts
- Did competitive benchmarking on fluorescence scanners and multi-pipetters to help drive future product design decisions

ACTIVITIES

- Climate Action Plan committee, *Oct 2022 – May 2023*
- PowerChords A Capella, *Sept 2019 – May 2020*

EDUCATION

Olin College of Engineering

B.S. Mechanical Engineering | May 2023

Relevant Coursework

- Mechanics of Solids and Structures
- Thermodynamics
- Transport Phenomena
- Modeling and Simulation
- Software Design

PROJECTS

VOLT – Capstone Project

September 2022 – Present

- Conducting market analysis on the home and grid energy storage industry to discover technical challenges to solve
- Pursuing technical depth in battery state-of-health (SOH) estimation and grid smart metering technology

Battery SOC Estimation

December 2022 – Present

- Responsible for single cell testing to develop an equivalent cell model (estimate open circuit voltage as a function of terminal voltage)
- Designing test processes, collecting and processing data for the model

SKILLS

Software
NX
SolidWorks
ANSYS
SimScale
Figma
Adobe Suite

Fabrication
3-Axis Mill
Lathe
CNC Router
Laser Cutter
3D Printer

Management
Asana
Trello
Slack
Confluence

Programming
Python
MATLAB
Arduino / C++
HTML / CSS / JS