

# Kai Goodman



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goodkaiman.github.io

## Education

**UC Davis – Materials Science and Engineering, Mech-E Focus (GPA 3.85)** June 2020 (expected)

- Deans' Honors List: Top 16% in UC Davis College of Engineering (Fall 2016 – Present)

## Technical Skills

- MATLAB • Excel • Visio • Fusion 360 • Solidworks • X-Ray Diffraction • SQUID Magnetometer •
- CNC Machining • 3D Printing • Composite Layup • Flexural/Tensile Testing •

## Technical Experience

**Engineering Intern**, *Origin Materials, West Sacramento, CA*

June - September 2018

- Assisted in operation of triphasic coiled tube reactor and distillation processes
- Conducted mass balances on reactor-distillation system to find yields from Gas-Chromatography (GC) analytics
- Located, tested, calibrated, and inventoried all pressure gauges, pressure transducers, RTD's, and thermocouples
- Created vacuum filtration system to remove solids from reactor effluent
- Convection-dried and ball-milled hydrothermal carbon (HTC)
- Constructed and studied piping and instrumentation diagrams (P&IDs) of chemical processes

**Researcher**, *Condensed Matter Physics Research Group, Davis, CA*

January 2018 - Present

- Built an electrochemical growth cell and optimized growth for electrodeposition of superconducting crystals to produce large facets and high, sharp T<sub>c</sub> transitions
- Conducted SQUID magnetometer, X-ray Diffraction, and resistivity measurements to characterize samples
- Performed crystal anneals to increase sample purity
- Wrote lab SOP's to make them site-specific and wrote technical papers to present project progress

**Composites Sub-team**, *Formula Racing at UC Davis, Davis, CA*

March 2016 - Present

- Developed and refined the manufacturing process of custom carbon fiber, fiber glass, and aircraft fabric parts using CNC machining and wet-layup
- Used CAD, CFD, and CAM software to design, develop, and create composite body panels, seats, nosecone, battery-cooling ducts, and an aero package for the car
- Tested composite samples to verify strength of manufactured parts using tensile/flexural tests

**R&D Technician Intern**, *Broadcom Limited, San Jose, CA*

August - September 2017

- Thermally stress tested radio frequency (RF) filters using network analyzers and signal generators
- Created spreadsheets and analyzed pass-band data to present test results for engineers

## Relevant Coursework

- Property of Materials • Mathematical Methods • Thermodynamics of Materials • Circuits • Dynamics • Fluid Mechanics • Rate Processes • Mechanical Behavior of Materials • Materials in Engineering Design •

## Leadership Experience

**Vice President**, *UC Davis Origami Club*

April 2018 - Present

- Planned activities for and led weekly meetings; emphasis on engineering applications of origami
- Finished among top 25% of entrants in NASA's crowdsourced origami contest for radiation shield design

**Trumpet Section Leader**, *Mission San Jose High School, Fremont, CA*

September 2015 - February 2016

- Led 24 trumpet players to improve music acumen and marching ability, won 1st in annual Newark Days Parade 2012-2016
- 10 Years of trumpet: winner of national Louis Armstrong Jazz Award 2016