# Kai Goodman

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## Education

**UC Davis - Materials Science & Engineering, Mech-E Focus (GPA 3.85)** Fall 2020 (expected)

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

## Technical Skills

• Electroplating • Electropolishing • Cyclic Voltammetry • Chronoamperometry • SEM • EDS • X-ray Diffraction •
• Composite Layup • Flexural/Tensile Testing • Thermogravimetric Analysis • Differential Scanning Calorimetry •
• Flash IR Thermography • MATLAB • Solidworks • Creo • Fusion 360 • SQUID Magnetometry • CNC Machining • 3D Printing •

## Technical Experience

**Keysight Technologies - Senior Design Consultant**, *Davis, CA* Jan 2020 - Present

- Developed a procedure for implementing gold-tin eutectic die attach processes using the MRSI-705 die bonder
- Investigated the effects of process parameters such as scrubbing motion, reflow temperature, and dwell times in order to optimize thermal/electrical conductivity, wettability, homogeneity, and CTE matching with substrate

**Condensed Matter Physics Research Group - Researcher**, *Davis, CA* Jan 2018 - Present

- Optimized growth for & built an electrochemical growth cell for electrosynthesis of superconducting crystals to produce large facets & high, sharp transition temperatures
- Conducted SQUID magnetometer, X-ray Diffraction, & resistivity measurements to characterize samples' magnetic, electrical, & crystallographic properties
- Investigated effects of oxygen saturation in a lattice on sample purity & superconductivity through annealing

**NASA JSC - Space Suit Materials Development & Prototyping Intern**, Houston, *TX* Sept - Dec 2019

- Developed compression molding methods for composite materials & evaluated their manufacturability, bondability, machinability, & impact/mechanical performance for a lightweight & robust exploration space suit
- Conducted thermogravimetric analysis & differential scanning calorimetry to thermally characterize composites
- Used flash-IR thermography to evaluate level of panel damage caused by high-energy, low-velocity impact
- Designed, implemented, & tested a leak test rig for evaluating leak rates through impacted panels

**Sandia National Labs - Multiscale Fab Science & Tech R&D Intern**, ABQ, *NM* Jun - Sept 2019

- Electropolished aluminum targets for high-energy-density physics experiments using analytical electrochemistry, barrier anodization, & selective etching processes
- Optimized electrochemical cell conditions for effective de-burring & minimizing bulk mass loss & pitting
- Electroplated novel CoFe alloys with low coercivity for magnetostrictive resonators & solar grid modernization
- Electrodeposited Cd thin-films with high surface quality to study the growth of Cd whiskers on steel substrates

**Origin Materials - Engineering Intern**, *West Sacramento, CA* Jun - Sept 2018

- Assisted in operation of p-Xylene coiled tubular reactor & distillation processes
- Conducted mass balances on reactor-distillation system to find yields from Gas-Chromatography (GC) analytics

**Broadcom Limited - R&D Technician Intern**, *San Jose, CA* Aug - Sept 2017

- Thermally stress tested radio frequency (RF) filters using network analyzers & signal generators

## Leadership Experience

**College of Engineering at UC Davis - Engineering Ambassador**, *Davis, CA* Jan 2019 - Present

- Gave tours of nano-manufacturing center, coffee lab, & machine shop to prospective high school students
- In charge of high school outreach on behalf of the College of Engineering & participated in student panels

**UC Davis Origami Club - Vice President**, *Davis, CA* Apr 2018 - Present

- Finished among top 25% of entrants in NASA's crowdsourced origami contest for radiation shield design