KEVIN COULSON

Highly motivated and passionate additive-manufacturing-focused engineer with strong creative design and simulation expertise along with extensive relevant work experience. Works at the intersection of design, prototyping, computational modelling. Adept project planning and management skills with the initiative to be an integral part of the next big thing in AM.
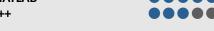
CONTACT

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SKILLS

Programming
- **Python** ●●●●●○
- **MATLAB** ●●●●●○
- **C++** ●●●●○○

Engineering Software
- **CAD** ●●●●●
- (e.g. Fusion, Solidworks,...)
- **FEA** ●●●●●○
- **CAM** ●●●●○○
- **SIMULINK** ●●●○○○
- **Schematic & PCB Design** ●●●●○○

Prototyping & Fabrication
- **3D Printing** ●●●●●
- **Digital Fabrication** ●●●●●
- (e.g. laser cutter, waterjet,...)
- **Arduino** ●●●●○○
- **Machining & Shop** ●●●○○○
- (e.g. lathe, mill, CNC,...)
- **Electronics Assembly** ●●●●●

Creative & Documentation
- **Rendering Animation** ●●●●○○
- **Adobe Creative Suite** ●●●●○○

Other
- **Mechatronics Design** ●●●●○○
- **Precision Machine Design** ●●●●●
- (e.g. DFM, DFA,..)
- **Modeling & Simulation** ●●●●●○
- **Data Analysis** ●●●●○○
- (e.g. numpy, scipy, pandas,...)
- **ML & Optimization** ●●●○○○
- (e.g. Tensorflow)
- **Materials Testing** ●●●●○○

INTERESTS

- Extensive skiing road trips ⛷
- National Park adventuring 🌲
- Discovering & playing new music 🎵

⚙ EXPERIENCE

09.18 - Present
⚲ DFN Lab, *UC Berkeley*
Graduate Researcher
- Currently developing adaptive voxelization algorithm to improve accuracy and computational speed of Computed Axial Lithography (CAL) process.
- Implementation of machine-learning based print prediction method. Supervision and onboarding several undergraduate researchers in validation testing and data collection.
- Collaboration with PI and doctoral students to prepare materials for reports, presentations, and journal submissions.
- Assistance in resin synthesis and processing, improvement of hardware setup for ease of use.

05.19 - 08.19
⚲ Formlabs, *Somerville MA*
Mechanical Engineering Intern
- Design, prototyping, and fabrication of mechanical calibration jigs for subsystems of Form 3 & 3L 3D printers to be used in factory assembly.
- Testing and validation of components for Form 3. Collaborated with manufacturers to finalize injection molding and thermoform designs to push to production, creating engineering drawings with GD&T specified features.

09.17 - 05.19
⚲ polySpectra, *Berkeley CA*
Engineering Intern
- Development and validation of a device to more accurately and efficiently determine the photopolymerization properties (critical exposure and penetration depth) for an in-development cutting edge 3D printing resin.
- Implemented features such as accurate and adjustable dosing of UV light, thermal control of resin, use in an oxygen free environment, and an intuitive touch-screen UI.

05.17 - 08.17
⚲ Airwolf 3D, *Costa Mesa, CA*
Engineering Intern
- Worked directly with CEO and lead engineering to modify a 2'×2'×3' build volume FDM printer commercially viable by improving DFM, DFA, and ease of use.
- Designed and installed custom build plate and chamber heating system to enable printing of large ABS parts.
- Designed, fabricated, and tested models to demonstrate the properties of novel FDM materials.

🎓 EDUCATION

08.20 - 05.21
⚲ University of California, Berkeley
M.S. Mechanical Engineering

08.16 - 05.20
⚲ University of California, Berkeley
Minor in Materials Science and Engineering
B.S. Mechanical Engineering

AWARDS, EXTRACURRICULAR PROJECTS

✱ **Innovation Catalyst Ignite Grant**, *Spring 2020*
Grant recipient for a $2,000 stipend to develop a novel gear pump driven 3D printer hotend designed to increase potential volumetric output by reducing printing forces. In response to COVID shutdown, created an illustrative animation of the function of the extruder.

✱ **Innovation Catalyst Spark Grant**, *Fall 2019*
Grant recipient for a $500 stipend to prototype and develop an inventive new 3D printer hotend. Created functional stand-alone prototype.

✱ **Formlabs Hackathon**, *Summer, 2019*
Created a direct-write SLA 3D printer in a 48 hour Hackathon using a tool changing motion system design.

✱ **Eagle Scout**, *Fall, 2015*