

hivaesmaeili

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EXPERIENCE

Apple • Cupertino, CA

January - August 2013

Product Design Engineer Intern - Architecture

- Independently designed, prototyped, and validated a potential feature for a future product
- Determined proper materials and geometry for product enclosures
- Modeled and assembled multiple prototypes of products for testing and design validation
- Fabricated parts/prototypes over multiple design iterations for ID review
- Performed product validation including shock/drop, environmental, pick/pry, light leakage
- Performed failure analysis to determine root-cause
- Traveled to China for a prototype build to analyze manufacturability/assembly/design/yield
- Characterized adhesive performance (dynamic shear/tensile, creep) on multiple substrates
- Designed/fabricated numerous test fixtures to test/validate product designs
- Worked with reliability engineers to create, implement, and analyze results from test waterfalls
- Created engineering drawings for and worked closely with vendors/suppliers
- Wrote custom-code in MATLAB to process, analyze, and visually communicate test results

Berkeley Manufacturing Institute • Berkeley, CA

2011-2012

Researcher - Optimizing Heat Transfer in High-Power LEDs

- Tasked with designing a heatsink + fan to cool a cluster of high-power LEDs
- Design goal was to cool LED from 100 °C to 60 °C -- delivered a package that cooled to 39 °C
- Planned and implemented research and experimental methodology from scratch
- Modeled fluid-structure interaction, heat transfer and solid dynamics using COMSOL
- Designed, machined (manual/CNC) and 3D-printed custom parts in-house in order to rapidly prototype and iterate designs
- Automated portions of the experiment using a combination of an Arduino microcontroller and custom equipment allowing experiment to run unattended 24/7
- Wrote custom program in MATLAB with proper documentation to analyze 500,000+ data points efficiently and output relevant data for easy analysis and visualization
- Created methodology for and performed particle image velocimetry, infrared thermometry, anemometry, and analyzed acquired data using MATLAB in order to verify theoretical models

TECH SKILLS

NX

SolidWorks

Pro/E

COMSOL

MATLAB

Simulink

LabVIEW

ANSYS

Machining

CNC (Mastercam)

Rapid Prototyping

Bluehill (Instron)

C / C++

Mathematica

Anodization

EDUCATION

University of California, Berkeley

Bachelor of Science • Mechanical Engineering • Graduating May 2014 • 3.6/4.0

Activities

- Lecturer for a graduate-level joint mechanical engineering and computer-science course (25+ students) covering CAD, product design, design for manufacturability, design for assembly, tolerancing, and GD&T
- Member of Formula SAE student vehicle team

Relevant coursework

- *Completed:* statics and mechanics of materials, material science, dynamics, heat transfer, measurements/reporting, fluid dynamics, computer science, numerical methods, circuit analysis, thermodynamics, controls, electromagnetism, optics, Lagrangian dynamics, continuum mechanics
- *In Progress:* product design and development, advanced measurements/reporting, numerical analysis