ADVANCED MECHANICAL ENGINEER

"Innovative Thinking, Strategy, & Vision"

- Highly accomplished candidate offering demonstrated expertise in technical development, leadership, and strategic planning with focused expertise in mechanical systems and software.

- Regarded for the unique ability to implement a highly organized, analytical, and process-oriented approach to achieve results that ensure compliance with corporate and client standards of quality.

Education & Certification

Bachelor of Science in Mechanical Engineering, 2008 – HARVEY MUDD COLLEGE

Professional Engineer, California; License #M35629 – BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS

Technical Proficiencies

Mechanical Design:	SolidWorks, Inventor, Simulation, Research, 3D Printing, Testing, FMEA/FTA
Analysis & Test:	Static/Dynamic/Elastic Mechanics, Thermal, Electromechanical, Testing, UL/IEC/NEC, ASCE 7-10, Matlab.
Manufacturing & Assembly:	Tolerance Analysis, Quality Control, Cost Reduction, Automation, Simplification, Fixturing. SAP PLM, Excel, Communication.
Fabrication Experience:	Waterjet, Laser Cutting, 3D Printing (FDM, SLA, PolyJet), Wood Shop, Metal Shop, MIG Welding, CNC Machining. NC Punch/Brake, Solder/Braze/Weld, Injection Molding, Casting, Extrusion, Sheet Metal, Paint/Plate/Texturing, Adhesives.
Software Development:	nodeJS, Python, C++, Git, Bash. HTML, CSS, Javascript, AngularJS, Bootstrap, jQuery, RegEx. Linux. Arduino. Raspberry Pi. CoffeeScript, Markdown.

Professional Experience

AUTODESK (2014-2016)

SENIOR SOFTWARE ENGINEER

Fulfilled a critical cross-functional role in software development, mechanical design, and testing for 3D printers and associated hardware and software components of the Spark 3D Printing Platform.

- Engaged in research and development into electromechanical systems, with a focus on discovering opportunities to improve and extend 3D printing capabilities and improve print quality and reliability.

- Served as the architect of an import utility that translated competitor software settings for use by the Spark platform.

- Developed asynchronous USB and Serial communication drivers for 3D printers in JavaScript.

- Led research to build a database of available consumer-level 3D printer materials.

COOPER LIGHTING (2012-2014)

MANUFACTURING/SUSTAINING ENGINEER

Executed Build-to-Order mechanical design, process improvement, facilities troubleshooting, and engineering documentation within a union-operated environment focused on the production of high-end architectural lighting products.

- Generated over $100K in annual savings through cost reduction initiatives including issues affecting purchasing, fabrication, assembly, and quality control.

- Eliminated production delays through development of an ECR/ECO/ECN system and a standardized finishing process.

- Produced electromechanical designs and bills of material for standard and customized orders at approx 100/month.

- Designed and implemented a device that successfully mitigates a failure mode for multi-stem pendants. Accepted by patent committee and submitted to USPTO.

SUNPOWER CORPORATION   (2009-2011)
PRODUCT DEVELOPMENT ENGINEER
Led the fulfillment of engineering product development responsibilities for commercial and residential scale rooftop photovoltaic products including planning, scheduling, design, and testing to meet all qualification, documentation, and release requirements.

- Assumed ownership of an underperforming product qualification and documentation process to bring it to completion.
- Led extension of two products into European markets through rigorous analysis, qualification testing, and documentation.
- Completed a full product qualification process for introducing a building-integrated residential photovoltaic product.
- Performed wind analysis reduction and structural qualification guidelines for sites in the United States and Europe.
- Secured one patent grant as a result of designing for SunPower's product portfolio.

COOL EARTH SOLAR   (2008-2009)
R&D MECHANICAL ENGINEER
Fostered the development of a functional prototype from concept to completion, demonstrating the viability of using metalized polymer membranes under pressure to concentrate and direct solar energy onto a power-generating receiver.

- Carried out design, analysis, prototyping, and testing of multiple technical implementations for a dual axis tracking concentrated photovoltaic system.
- Responsible for the design, build, and successful demonstration of component integration including an optical concentrator tracking support frame, a low-cost single-phase heat exchanger, and a primary concentrator film restraint.

Patents

Active Fire-Blocking Wind Deflector
US 8763316 B2
ISSUED March - 2012
A rooftop photovoltaic solar system component which allows two configurations. In the first configuration the wind deflector comprises a deflecting portion adapted to deflect wind blowing on the rooftop above the rooftop array and a ventilation portion having a plurality of openings, the openings positioned to permit airflow under the rooftop array. The wind deflector assumes a second configuration upon release of a thermal fuse. In the second configuration, the deflecting portion is elevated from the first configuration and the ventilation portion is positioned to permit less airflow through the plurality of openings.

Positively Fastening Rooftop Mounting System
PROVISIONAL April - 2012
A mounting system that ensures adequate fastening to rafter subconstruction underlying the exterior facing elements of residential and commercial rooftop constructions even when the mounting system is not positioned directly above the rafter or there is inaccuracy of finding the rafter below the desired installation location.

Multi-Stem Pendant Compression Brace
PROVISIONAL Aug - 2013
A clamp design that mitigates the twisting mode of pendant suspension systems with more than one rigid tube by coupling the tubes at the maximum deflection point in the twisting mode. This prevents external loads from driving the pendant into the commonly seen unsightly and potentially dangerous twisted meta-stable state.

Controllable Release Build Plate for 3D Printer
US 62/275,706
FILED Jan - 2016
A system, components, and process which provide positive engagement and securement of part while being 3D printed while also affording negligible removal force of finished part when desired by control of system components. Applicable to SLS, DMLS, and FFF 3D printing methods.