

BARBARA KRUSE

OPTO-MECHANICAL ENGINEER

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HIGHLIGHTS

- 5+ yrs mechanical design experience on high end displays, Dolby Laboratories
- 2+ yrs mechanical design in haptic systems, and touchscreen displays, Immersion Corporation
- Masters in Mechanical Engineering, UC Berkeley
- Strong analytical skills combined with practical problem solving experience
- Broad design experience - thermal management, design for manufacturability, product design, sheetmetal and plastic design, vibration analysis.

CURRENT – Masters Candidate in Optical Engineering,

University of Arizona, Tucson

Expected Graduation – Dec 2014

Relevant Coursework – Optical Design and Instrumentation, Electromagnetic Waves, Diffraction and Interferometry, Optical Specifications, Measurement and Testing, Linear Systems and Fourier Transforms

EXPERIENCE

Professional Imaging Products, Dolby Laboratories

San Francisco, California

Project Engineer, 2012 – 2013,
Senior Design Engineer, 2008 – 2013

- Core member of design team, from prototype to release, for award-winning PRM-4200, an LED backlit LCD Professional Reference Monitor.
- Lead team for thermal characterization of optical performance of LCD and backlight.
- Designed experiments and data analysis to support thermal feedback algorithm.
- Designed thermal management solutions for multiple components in Dolby product line incorporating CFD analysis and bench top testing.
- Worked closely with manufacturing and vendors, both overseas and domestic, to maintain product schedule and minimize cost.
- Reduced acoustic noise in forced air applications.
- Designed various manufacturing tools and processes.

Touch Interface Products, Immersion Corporation

San Jose, California

Mechanical Design Engineer, 2005 – 2008

- Designed mechanisms for actuators, test fixtures, and systems integrations for touchscreen displays.
- Designed and prototyped various force-feedback actuators and systems, including joysticks, touchscreens, and rotary knobs, including custom integration of actuators into customer specified applications. Several designs led to new license agreements as well as patentable technologies.
- Project managed accelerated fatigue testing for medium volume electromagnetic actuator, including failure analysis, test plan development, mechanical design, management of BOM and associated purchasing, data collection and analysis.
- Audited manufacturing processes for various applications, as part of yield improvement project. Informed future design for manufacturability.
- Conducted data analysis and test fixture design for improved end of line testing.
- Mathematical modeling and FEA analysis for resonant system for improved tactile perception.

Human Interface Robotics, Human Engineering Lab

University of California, Berkeley

Graduate Student Researcher 8/2002 – 8/2005

- Developed mechanical design for human worn robotic devices for augmentation of lower extremities
- Designed, built and tested control and mechanical systems for power-assisted prosthetic knee - Presented design to lead engineers and president of Blatchford Prosthetics Group.
- Developed mathematical simulation for optimization of transmission of motorized knee to allow power regeneration in level walking or descents.

EDUCATION

Masters of Science, Mechanical Engineering **Univ. of California, Berkeley, 2005**

- *Masters Thesis* - Analysis of Power-Assisted Prosthetic Knee with Regenerative Braking
- National Science Foundation Graduate Research Fellowship, 2002
- *Coursework* – Advanced Electro-mechanical Design, Product Design, MEMs, Design and Optimization, Real-time Motor Control, Control Theory

Bachelors of Science, Mechanical Engineering **Virginia Commonwealth University**
Bachelors of Fine Arts, Sculpture and Extended Media **Richmond, Virginia** **2002**

SKILLS

Technical – Mechanical design for optical/thermal systems, Thermal design for electronics, Plastics design for molding, Sheet metal design, Design optimization, CFD, FEA, Strong prototyping skills including machining, welding and electrical wiring.

Software – Basic knowledge- Zemax, CODEV and LightTools,
Experienced user - Solidworks, CFDesign, Autodesk Inventor, PDMworks, Solidworks Simulation, Agile, Matlab

Design – Experienced working with Industrial Design teams, Strong creative process and concept generation, accomplished in both 2-dimensional and 3-dimensional artworks

Personal – Strong leadership and communication skills, project management, experience working with teams of diverse individuals both across discipline and cultural backgrounds

AWARDS

2012 Technical Emmy Award (Team member)– Professional Reference Monitor

Patents –

20090167677 Method and Apparatus for Providing Communications with Haptic Cues

20090153350 Method and Apparatus for Distributing Haptic Synchronous Signals

20090096746 Method and Apparatus for Wearable Remote Interface Device