

TIMOTHY W. SCALES

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EDUCATION

California Polytechnic State University
B.S. Mechanical Engineering

San Luis Obispo, CA
March 2002

EMPLOYMENT OBJECTIVE

To further my experience in the field of mechanical design engineering and project management; work in a team environment applying my skills in a practical manner; and to be challenged with technical problems, emerging technologies and design concepts that encourage both creative and analytical thinking.

EXPERIENCE

Flexstar Technology

Mechanical Engineer

Longmont, CO
6/2006 – Present

Environmental Chamber – Machine Design

- Designed sheet metal and plastic parts for an environmental chamber for testing hard drives.
- Created parts, assemblies and drawings for prototype and production parts.
- Tested new concepts and documented all aspects of the machine design.

Samson Design

Mechanical Design Engineer – Consulting

Boulder, CO
6/2004 – 6/2006

Hard Drive based PDA

- Worked with electrical engineers to create a compact board layout and human interface.
- Design a handheld enclosure for plastic injection molding with hard drive shock mounting.
- Delivered a working prototype for the client and potential customers.
- Performed drop and shock testing to verify design for product durability.

Beverage Dispenser

- Developed concepts for a new beverage dispenser system.
- Worked with electrical engineering company to create a complete working system.
- Completed mechanical design, bill of materials, and delivered 5 functional prototypes.

Medical Quick Connect Fitting

- Created concepts for quick connect fitting for gas and fluid purposes.
- Tested concept to prove performance and determine functional requirements.
- Designed 3-D CAD model of entire assembly for plastic injection molded manufacturing.

Office Space Solutions

- Developed new design concepts for client market.
- Worked with client to design and develop office space storage solutions.
- Completed a mechanical design and drawing package ready for manufacturing.

Video Laryngoscope

- Developed concepts and manufacturing plan for a variety of injection molded designs.
- Worked with potential fiber optic and video suppliers for potential prototype.

ACTA SC Inc.

Mechanical Engineer – Flight Analysis

Vandenberg AFB, CA
10/2002 – 6/2004

Debris Risk and Toxic Hazard Analysis

- Performed Failure Mode Analysis to determine the potential risk of launch vehicle break-up and potential effect of changing inertial properties during catastrophic failure on vehicle performance.
- Performed software and database modifications to improve performance and presentation of computer models and risk analysis software for the Air Force, Flight Safety Dept.
- Modified and tested computer models to predict the hazard area created by falling debris and the risk to human life associated with that geographic area.

Nanometer Technologies

Atascadero, CA

Mechanical Design Engineer/Consultant

3/2002 – 8/2002

Automated Fiber-Optic Inspection Station

- Worked with the senior design engineer and lead software engineer to design a 3-axis motion control system for a machine vision inspection system.
- Worked with optical vendor to test and select the best components for nanometer-scale visual measurements.
- Redesigned current fiber optic polishing machine components for retrofits and to eliminate failure problems.

Pacifix Product Development, Inc.

Palo Alto, CA

Product Design Engineering Intern

6/2001 - 10/2001

Lesion Location Device Project

- Worked with senior product engineer to deliver an injection molded core design, with a family of accessories, to clients under strict timelines and performance requirements.
- Worked directly with the plastic injection molding engineers to provide the best product redesign for the greatest ease of manufacturability.

Cryogenic Breast Tumor Treatment and Biopsy Systems Project

- Assembled prototypes and worked with the client and manufacturing teams to make revisions to manufacturing and inspection procedures.
- Created mechanical drawings and bill of materials, including electrical and pneumatic components, for the complete manufacture and inspection of product prototypes.
- Assisted in Underwriters Laboratories (UL) approval submission.

Tumor Ablation System Project

- Performed clinical testing with tumor ablation prototype to prove new design concepts.
- Successfully demonstrated alternative design concept and presented results to the client.
- Documented the testing process for client review.

Guidant - Vascular Intervention, Equipment Group

Santa Clara, CA

Mechanical Design Engineering Intern

06/2000- 12/2000

Catheter Force Gauge Project

- Designed and tested a force measurement device to record forces during normal minimally invasive surgical tests and clinical trials.
- Worked directly with physicians and clinical technicians in surgical testing to help determine the ideal force measurement techniques and design requirements.
- Performed Finite Element Analysis to ensure viability of strain gages.
- Designed circuit layout and selected components for data acquisition of mechanical forces.
- Wrote a software package using Visual Basic to allow the physician to easily interface with the device.
- Designed the device to provide vital information to the physician or clinical technician in real time.
- Documented the design, electronics, bill of materials, and software for future product iterations.

K2 Corporation, R&D Department

Vashon Island, WA

Engineering Intern

06/1999 - 09/1999

Hybrid Binding Project

- Designed and developed mock-up and prototype products for potential product lines.
- Worked directly with the senior design engineer to construct a step-in/strap-in hybrid prototype snowboard binding.

Approach Ski Retrofit

- Responsible for the design of an alternative component for a product retrofit package for European distributors to strengthen current design.
- Led product assembly groups during a product retrofit and assisted in procedure documentation.
- Responsible for documentation of changes to product design, mechanical drawings, and bill of materials using Solidworks and MS Excel.

COMPUTER SKILLS

- Microsoft Office (10 years)
- Solidworks (7 years)
- Pro/ENGINEER V20 (4 years)
- Unigraphics NX 2.0 (2 years)
- CATIA V5 (1 year)
- MATLAB V13
- Autodesk Inventor 11
- Microsoft Visual Basic V6
- Microsoft Visual C++ V6
- Microsoft Project
- COSMOS Works
- OrCAD V8