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## **Objective**

To undertake the responsibilities and challenges of a position in project-oriented engineering. The position would ideally incorporate project management, problem solving and technical innovations.

## **Special Skills**

Degree: B.S., Mechanical Engineering  
CAE Packages: Catia, Pro-Engineer, SolidWorks, ANSYS, AutoCAD, Anvil 5000, CadKey  
Languages: FORTRAN, Pascal, BASIC, APL, DBASE III  
Platforms: Unix, Linux, VMS (VAX), CDC NOS (Cyber 170), MS-DOS, Macintosh  
Other Software: PageMaker, Interleaf, Microsoft Word, Excel, Power Point, Microsoft Project  
Other: Secret Clearance (inactive), Project Direction, Geometric Dimensioning and Tolerancing, ISO 9000, Plastics (PVC, Fluoropolymers), FDA Regulations

## **Professional Employment**

### **November 2007 – Present**

Mechanical Engineer

Energy Solutions, Laurel, MD (Contract Temporary)

Responsibilities: Design and analysis for nuclear decommissioning projects

Achievements: Developed remote access techniques for component replacements  
Confirmed dimensional requirements for video and ultrasonic sensors  
Developed guides to allow cable controlled motor assembly to reliably interface with drums on a production line

Procedures: Researched counterweight systems for waste fill-head deployment  
Confirmed compatibility for gasket materials  
Checking drawings and specifications  
Modeling assemblies and mechanisms in SolidWorks

### **January 2007 – November 2007**

Mechanical Engineer

Becton, Dickinson Diagnostic Systems, Sparks, MD (Contract Temporary)

Responsibilities: Conceptual development for Mid-volume Automated eXtraction (MAX) bench top integrated robotic real-time amplified DNA assay system

Achievements: Developed low cost unit dose concept for MAX System  
Developed prototype ergonomic tool for Micro-Probe reagent disposable  
Developed extractor with improved kinematics

Procedures: Interfaced with vendors to confirm interfaces to robotic equipment  
Developed concepts and layouts for automated sample identification and tracking  
Participated in configuration evaluation using Pugh decision matrix  
Reviewed timing issues for testing sequence  
Investigated constraints for fiber optic routing  
Optimizing geometry to maximize throughput and minimize the possibility of cross contamination  
Developed MAX configurations with different robots from different vendors.  
Confirmed required reagent quantities  
Designed improved guide plate for Lysis reagent trough  
Developed concepts to address wire chafing issues on Viper SP

**August 2003 – December 2006**

Mechanical Engineer

BAE Systems Ground Systems Division, York, PA (Contract Temporary)

Responsibilities: Support and concept development for the recovery and maintenance vehicle (FRMV) of the Future Combat Systems (FCS) family of armored vehicles

Determined performance and preliminary size for lifting apparatus

Achievements: Oversaw trade study of oxygen generation system for cutting and welding

Developed space saving actuator arrangement for vehicle crane

Developed stowable fuel tank system to comply with air mobility requirements

Procedures: Participated in trade study between rotating and fixed lift concepts

Researched specifications and oversaw study verifying C-130 transport capability

Conducted weight and power surveys of vehicle

Performed preliminary mechanical analysis of lifting systems

Supervised preliminary layout of turret electronics

Reviewed signature and survivability issues

Developed recovery and maintenance tool list

Developed composite stowage pods for external equipment

**December 2002 – August 2003**

Mechanical Engineer

General Dynamics Amphibious Systems, Woodbridge, VA (Contract Temporary)

Responsibilities: Provide mobility systems support to prognostics effort

Documenting requirements flow down from system specification documents

Supporting fault characterization test plan

Achievements: Incorporated vendor feedback in finalizing critical item definition specification

Procedures: Participated in System Requirements Review

CAD modeled for space claim and documented vehicle impact of prognostics system

Identified long lead hardware and software for prognostics

Documented existing specifications, sensors, and signals on vehicle systems and delivered data to subcontractor developing system hardware

Performed business case and total cost of ownership (TCO) analysis for a vehicle prognostics system and for an online oil monitoring system

Refined program management plan

Supported wireless and self powered sensor demonstrations

Developed concepts to eliminate water trap in vehicle APU exhaust

**October 2002 – November 2002**

Mechanical Engineer

EG&G Ocean Systems, Ijamsville, MD (Contract Temporary)

Responsibilities: Developed improved version of Advanced Development Soil Sampler (ADSS), an airborne soil sampling system deployed from Remotely Piloted Vehicles (RPVs)

Achievements: Reduced ADSS Diameter by 25%

Reduced ADSS Part Count by 40%

Developed fin deployment mechanism

Procedures: Investigated low friction coatings with regard to possible sample contamination

Investigated COTS material handling systems

**March 2002 – June 2002**

Mechanical Engineer

Saft America, Cockeysville, MD (Contract Temporary)

Responsibilities: Design, layout, and packaging of Lithium Ion batteries for defense and space applications for Demonstration of Autonomous Rendezvous Technology (DART)

- satellite and Reconnaissance, Surveillance, Targeting Vehicle (**RST-V**) hybrid vehicle systems
- Achievements: Developed Drawing Package for **DART** batteries  
Did preliminary layout for ruggedization of battery parts for **RST-V**  
Liaison with customer to refine requirements
- Procedures: Weight and volume roll up to confirm compliance with customer specifications  
Thermal analysis of electrical components  
Evaluated packaging, isolation, and bussing schemes for **RST-V** battery packs

#### **June 2001 – December, 2001**

- Senior Mechanical Engineer  
Raytheon C<sup>3</sup>I Systems, Towson, MD (Contract Temporary)
- Responsibilities: Design, analysis, and specification review for Successor Identification Friend or Foe (**SIFF**) naval interrogator system for the Ministry of Defence of the UK
- Achievements: Conducted mass, volume analysis for unit  
Analyzed thermal requirements for system, determined optimum cooling method, set criteria for fan, determined fan requirements and location
- Procedures: Reviewed Specifications for presentation at preliminary design review  
Verified mounting configuration compatibility with existing platform for retrofit  
Established criteria for reuse of existing line replaceable units (**LRU**) in new unit  
Participated in audit to ensure that handling of documents with foreign classification in accordance with US security standards  
Evaluated antenna and radome placement issues

#### **October 2000 – May, 2001**

- Senior Mechanical Engineer  
Varo, LLC, Garland, TX (Contract Temporary)
- Responsibilities: Mechanical design of power supply (**PPS**) for naval vertical launch system  
Developed qualification test procedure for verification of suitability of **PPS** design  
Redesigned battery box of TOW missile Improved Target Acquisition System (**ITAS**)  
Developed time tables for bids
- Achievements: Achieved a 60% cost reduction on cast **ITAS** battery box as compared to predecessor  
Verified mechanical durability of test equipment for **PPS** qualification test
- Procedures: Performing tolerance and mechanical analysis for military electronics package  
Replaced conventional paint with corrosion resistant powder coat technology

#### **March, 2000 – September, 2000**

- Mechanical Engineer  
Raytheon Systems Company, Richardson, TX (Contract Temporary)
- Responsibilities: Mechanical redesign of Tactical Communications Processor (**TCP**) satellite communications terminal used for secure networks on Rivet Joint (RC-135) aircraft and ground stations for the Big Safari program
- Achievements: Achieved 80% reduction in assembly touch labor compared to previous TCP unit  
Achieved 90% cost reduction for enclosure through advanced casting techniques
- Procedures: Replaced wiring harnesses with flexible circuit board assemblies  
Replaced custom processor with commercial off the shelf (**COTS**) single board PC  
Incorporated inherent red/black (restricted/unrestricted) data per Tempest standards  
Verified unit assembly and cooling through solid modeling and stereo lithography  
Replaced paint with a powder coating process which increased durability, reduced cost, and eliminated hazardous waste issues  
Designing power and fiber optic interconnects between red and black sides of TCP

**February 1999 – February 2000**

Mechanical Designer

Lockheed Martin Missiles and Fire Control, Grand Prairie, TX (Contract Temporary)

Responsibilities: Developed concepts for **LIMAWS-R** helicopter transportable artillery rocket system

Developed production drawings for **HIMARS** lightweight rocket artillery system

Incorporated engineering changes in radiator system for international space station

Developed fixed emplacement concepts for **PAC-3**, **MEADS**, and **Arrow** surface to air missile systems

Achievements: Designed simplified mounting system for missile canister

Designed **PAC-3**, **THAAD**, and **Arrow** ballistic missile defense system installations

Procedures: Weight reduction for igniter retention system, and designed field modification kit  
Produced production drawings for manufacturing and sketches for prototype effort

**September 1998 – December 1998**

Mechanical Engineer

Raytheon Systems Company, Richardson, TX (Contract Temporary)

Responsibilities: Repackaging antenna components in stowed transport configuration

Designing brackets to accommodate parts on transport vehicle

**June 1998 – September 1998**

Mechanical Engineer

Montgomery Kone Corporation, McKinney, TX (Contract Temporary)

Responsibilities: Designing standardised and custom passenger and freight elevators installations in response to customer needs

**March 1996 – June 1998**

Mechanical Designer

Lockheed Martin Vought Systems, Grand Prairie, TX (Contract Temporary)

Responsibilities: Developed modular canister for **MEADS** surface to air missile to allow use of existing Munition;

Designed modifications for navalization and commonality in **VT-1** surface to air missile used in Thomson-CSF **Crotale NG** system;

Developed all terrain stabilizing gear for light weight Patriot Launcher;

Achievements: Designed simplified connection system for missile canister

Evaluated composite materials for missile canister

Documented test history to show progress of missile over time

Designed system to tether igniter and prevent damage to ship structure

Resolved high-speed dynamic loading issues

Participated in verification and testing

Designed and resolved producibility issues on light weight navalization kit

Procedures: Weight reduction for igniter retention system

Designed field modification kit

Determined part and assembly weights

Recovered archive files from legacy system

Produced production drawings for manufacturing and sketches for prototype effort

Arranged recovery of archive files from legacy system

Designed kit for field modifications

**February 1994 – March 1996**

Locomotive Structures Engineer

General Electric Transportation Systems, Erie, PA (Contract Temporary)

Responsibilities: Developing structure, ducting, and cabling for locomotives

Achievements: Lead engineer for 6000 HP AC locomotive blower cab

Directed design of blower cab, achieved 50% part reduction over previous design

Supervised construction of six prototype blower (four constructed in-house and two constructed at an outside vendor) to verify assembly and productivity issues for both internal manufacture and outsourcing

Saved 80% of cost on components of existing products by controlling dimensions to allow for more economical manufacture

Participating in product wide cost reduction efforts as part of a "Tiger Team"

Member of cycle time reduction team

Procedures: Researching weight reduction methods through composite materials and FEA

Investigating replacement of conventional fasteners with advanced adhesives

Researching and resolving ergonomic, human factors and related safety and maintenance issues in accordance with ISO 9000

Following construction of prototypes and verifying producibility

Verifying structural integrity and compliance with internal design guides, federal standards (FRA), and generally accepted railroad practice (AAR)

**November, 1993 – February, 1994**

Mechanical Designer

Rockwell International, Command and Control Systems, Richardson, TX (Contract Temporary)

Responsibilities: Designed MilStar data terminal installation in HMMWV (Humvee) for military program

Achievements: Confirmed fit on existing vehicle through construction of mockups

Procedures: Developed part structures

Confirmed part counts

Determined part weights

Released components for manufacture

**June, 1993 – September, 1993**

Product Engineer

Will-Burt Corporation, Orrville, Ohio (Contract Temporary)

Responsibilities: Developed remote control light pointing system for improved flood light system

Achievements: Reduced unit cost by 50% and increased unit reliability by 40%

Determined and resolved possible patent conflict

Reduced product envelope to conform with military requirements

Procedures: Product Design

Prototype concept, construction, and verification

Vendor liaison

Consulting with customers for comments on earlier version of system

**April, 1992 – March, 1993**

Designer

Stewart and Stevenson, Tactical Vehicle Systems, Sealy, Texas (Contract Temporary)

Responsibilities: Designed truck components, assemblies, and installations in accordance with ANSI Y14.5M and DOD 100 for new truck design for the US Army

Achievements: Determined that throughput on DOS work stations running Anvil 5000 could be increased by 500% by changing system setup

Developed frame structural layout used for installation on all models

Resolved cause of conflict between network and disk maintenance software

Designed forging to replace weldment, increased durability and lowered costs

Procedures: Designed, detailed, and checked interface for components

CAD training

Researched conversions between European and US specifications

Reviewed outside vendor CAD drawings

**February, 1991 – October, 1991**

Design Engineer

Jarvis Products Corporation, Middletown, Connecticut

Responsibilities: Designed and detailed meat packing equipment and machine tools

Procedures: Designed parts

Modified existing parts for new applications

Designed and assembling prototypes

Developed a product and part structures

Liaised with vendors

Drew parts for use in publications

Projects: Automatic foot shear, designed lower frame, hydraulic and sterilizer assemblies, called out product structure, produced assembly drawings for shop floor reference, confirmed tolerances and clearances

Dehider blade regrinder, dubbing assembly prototype

Horn Cutter, sterilizer unit, reverse engineered from purchased product

Bung dropper, redesigned blades for improved durability

**May, 1990 – January, 1991**

Production/Assembly Mechanic (Contract Temporary)

Digital Equipment Corporation, Westfield, Massachusetts

Responsibilities: General factory work

Procedures: Operating Press brakes, CNC punches, riveters, spot welders, inserter machines, and grinders to manufacture sheet metal computer enclosures

Quality control, parts inspection

**August, 1989 – September, 1989**

Designer/Drafter (Contract Temporary)

National Metal Industries, Springfield, Massachusetts

Responsibilities: Sheet metal design and drafting

Procedures: Designed and drafted sheet metal components for a Xerox engineering copier stand in conjunction with finalizing design of the copier

**February, 1989 – May, 1989**

Plant Engineer

Judd Wire Inc., Turners Falls, Massachusetts

Responsibilities: Facilities Management

Procedures: Liason with architects for plant expansion

Proposed and researched air make up system for shop floor to increase heating and exhaust capabilities

Tested of scrape and print durability testing apparatus

Designed extruder flange and throat for compatibility with existing systems

Designed hazardous waste containment area to comply with EPA regulations

**December, 1987 – November, 1988**

Staff Engineer

Architects, Inc., Northampton, Massachusetts

Responsibilities: Designed HVAC, plumbing, electrical, and fire protection systems

Procedures: Researched CAD/CAM system and FAX system and reviewed vendor bids.

Computer and software problem trouble shooting

Staff computer training

Documentation of computer applications for staff

Site inspection and review regarding the feasibility of renovation

Liason with consulting engineer

Technical research in reference to state codes

Projects: Mercy Hospital Physicians' Building, Springfield, Massachusetts

Rutland Heights Hospital survey, Rutland, Massachusetts

Bay State Medical Center renovation, North Adams, Massachusetts

Goshen Fire Station, Goshen, Massachusetts

**Professional Organizations**

American Society of Mechanical Engineers (ASME)

**Education**

BSME, University of Massachusetts, 1987

Liberal Arts Curriculum, Hampshire College, Amherst, Massachusetts, 1980-1982

Honors: Engineering Teaching Assistant, U. Mass, CAD/CAM Course 1986-1987

**Additional Experience**

Conference Chairman, ARISIA Speculative Media Conference 1990, 1991, Organized conference, incorporated as not for profit, Assembled staff, Supervised event programming, Drafted and implemented budget

Senator, Student Government Association, University of Massachusetts, 1985 - 1987

Rents and Fees Committee, University of Massachusetts Student Government Association audited University Trust Funds

Conference Director, NOTJUSTANOTHER Con I & II, Amherst, Massachusetts, 1985, 1986

Representative, Community Council, Hampshire College, 1981 - 1982

Society for Creative Anachronism - Received regional award for design and construction of Roman Armor (Lorica Setmentata)