

May 22, 2018

Daniel S. Cook
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Learn more about me at:
<http://www.danielscook.com>

Hiring Manager:

Thank you for taking the time to consider me for the position currently available with your client; I would also be interested in learning more about other positions for which you feel I may be better suited. I am confident that a cursory review of the enclosed resume will encourage any interested party to request a more formal, personal meeting, which I am eager to entertain.

As a prior Senior Engineer and Project Manager in a small, leading technology company, I have successfully coordinated and participated in numerous complex embedded electro-mechanical product development efforts; two projects in particular involved an intra-aortic balloon pump and portable respirator. My current role provides unique challenges associated with mid-size privately-held companies yet I have extensive experience with smaller (5-12 employees) and larger companies including in-depth involvement with General Dynamics – Electric Boat Division. These experiences combined have prepared me for all levels of organization, complexity, hierarchy, and specialization that are present in companies of varying sizes. I have served in several roles ranging from a member of a small, collaborative team to leading and managing complex projects where safety was a paramount concern and responsibility. Furthermore, by maintaining close professional and personal relationships with customers, I was able to keep the customer informed while balancing technical requirements and business goals. I am confident that I would be successful in the most technically challenging roles, corporate environments, and cultures.

I feel that the experience I have gained with Ward Leonard Electric, Enfield Technologies (a small 'start-up' company) as well as in the U.S. Navy Nuclear Power Program set me apart from most applicants. New product planning, development, design, sales, and marketing contrast and compliment my experiences with electro-magnetic machine design, control system and physical plant modelling, reactor plant operation and supervision; combined, these experiences have fortified the theoretical knowledge gained through education to make me a unique candidate for challenging development, embedded servo controls, and management roles in technology, mechatronics, engineering, automation, and fluid power alike. I am a determined team member and team leader with a 'Let's get the job done right!' attitude. My personality, skills, experiences, and attitude are best utilized in a role that will have a direct and meaningful impact on an organizations effectiveness, efficiency, and profitability.

The enclosed resume provides more detail about my qualifications; however, I am certain that a personal meeting would afford me the opportunity to discuss in more detail the extent of my experiences. I am eager to meet with any member or representative of your client's company to discuss my qualifications further. Thank you for your consideration.

Best regards,

Daniel S. Cook
Encl.: Resume

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- **Technical Aptitude**
- **Diverse Background**
- **Ambitious Leader**
- **Small Business Experience**

EMPLOYMENT HISTORY

Ward Leonard Electric **2012 – Present**
Senior Applications Sales Engineer / Motor Design & Development Thomaston, CT

- » Assisted prospective clients through email, phone conversations, and face-to-face discussions with a primary focus on understanding what they wanted to achieve.
- » Leveraged first principles and numerical modelling techniques to assist clients in selecting suitable technologies and products followed by preparation of written specifications.
- » Provided executive level guidance and assistance on various technology related matters including competing products, new or start-up technologies, competitive impact of competing companies and products, product planning and product line development, software based efficiency tools to assist other employees in being more effective with information that was already available, and professional development/tutoring of other employees.
- » Identified market demand for higher power density induction motors and spearheaded the development/test/third-party certification of four successful 'white paper' designs of forced-convection three-phase AC induction motors from 400HP to 5000HP.
- » Researched incumbent and competing technologies to assess the intellectual property landscape and educated others of technical/legal barriers; listed as 'Inventor' on two patents.

Enfield Technologies **2003 – 2011**
Principal Engineer / Engineering Manager / Design Engineer Trumbull, CT

- » Researched incumbent and competing technologies to assess the intellectual property landscape and educated others of technical/legal barriers; listed as 'Inventor' on at least 7 patents pending with 1 patent issued to date (7,401,541)
- » Developed numerous products from scratch, often beginning with fundamental technology research and lab testing and ending with production coordination and contracts.
- » Lead or Sole developer on several custom development projects where new products or technologies were necessary to achieve success.
- » Provided executive level guidance and assistance on various technology related matters including competing products, new or start-up technologies, evaluation of feasibility of various control algorithms, product road-mapping, software, and company technical personnel development strategies.

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University of New Haven

Department of Electrical and Computer Engineering
Adjunct Professor

2008 – 2011

West Haven, CT

- » Responsible for mentoring and assisting Junior/Senior level students in technical skills development as well as personal and professional growth; developed engineering and professional skills in young and ambitious intellectuals.
- » Conduct hands-on education with up to 12 engineering students in a blended lecture and lab environment while fostering ‘technical-yet-practical’ engineering philosophy
- » Worked with senior faculty to evaluate and revise the existing curriculum to better prepare students for ‘real world’ dilemmas; proposed, wrote, and implemented customized design projects to adequately challenge students of varying levels of capability.
- » Encouraged and inspired all students to achieve to the maximum of their ability by stimulating collective conversation, assigning challenging entry-level design problems, and challenging mental blocks or paradigms in their approach to problem solving.

United States Navy

Naval Submarine Support Facility
NSF Director / Nuclear Repair Project Lead / Technical Writer

1993 – 2003

Groton, CT

USS Seawolf (SSN 21)

Engineering Supervisor / Reactor Operator / Electronics Technician

Groton, CT

Technical Skills

- » Highly skilled with all standard electronic and mechanical lab test instruments and sensor technologies (oscilloscopes, DMM’s, function generators, data acquisition, load cells, calipers/micrometer, flow meters, pressure sensor and gauges, regulators, EPR’s, etc)
- » Expert troubleshooter – routinely assists employees and clients with difficult troubleshooting of complex closed loop and open loop electro-mechanical systems
- » Multi-disciplinary – circuit design/bread boarding, embedded systems, serial communications, solid modeling, machining (lathe, Bridgeport, etc), magnetic modeling, dynamic systems modeling via first principles equations and computer simulation, assembly/C language programming, construction of electro-mechanical prototypes
- » Simultaneous application of skills during complex product and system design on both a macro-systems scale down to a micro-component scale to develop a more complete and intuitive understanding of an overall system; enables the creation of more robust, reliable, maintainable, and cost effective product and system designs
- » Exposure to, interpretation of, and application of several industry standards from ISO, UL, IEC, IEEE (for example – UL943, ISO11898, IEC60529, MIL-STD767)

Diverse Hands-On Experience

- » Over 10 years experience in various forms of fluid power, electronics, machinery, electro-mechanical actuation and automation

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- » Research and evaluation of emerging technologies and companies for potential acquisition opportunity, product design-in, technology buy, or competitive threat
- » Evaluation of risk associated with new products by considering volume/COGS trade-offs, market acceptance, product life-cycle, and return-on-investment (ROI) over product life
- » Experience with new product development from concept development and refinement to realization and production
- » Management and Leadership in small to large projects as well as daily operations
- » Electronic design, mechanical design, product design, and intellectual property management
- » Hands on experience with sales, application support, and customer service

Visionary Management Style

- » Aggressively establishes and pursues team oriented goals and challenges with a focus on intrinsic organizational growth
- » Develops and adapts processes, procedures, and personnel to best balance the needs of the customer, organization, team, and project
- » Establishes and maintains high standards in self and others to foster an environment of continuous improvement
- » Astutely and objectively recognizes both strengths and weakness in processes, procedures, and personnel in order to leverage resources in pursuit of company-wide goals

Perceptive Leader

- » Makes astute and timely decisions, often with limited or imperfect information; welcomes alternative views in the process of evaluating and making decisions
- » Inspires sustained superior performance in self and others by clearly establishing and maintaining high standards
- » Revered as a valuable team member on multiple projects as well as a respected team leader on development projects critical to both the customer and the company; inspires trust and respect among team members by a simple virtue of 'leading by example'
- » History of accelerated promotion, level of responsibility and accountability

10 Years Military Service (Naval Nuclear Powered Submarines)

- » Held SECRET Security Clearance
- » Assigned responsibility for operation and maintenance of a 58-year old radioactive liquid processing barge and 4 portable storage tanks
- » Earned accelerated advancement to Chief Petty Officer (E-7) approximately 5 years ahead of peers
- » Earned 2 Navy Achievement Medals: designed, developed, and constructed electronic indication simulator; simulated conditions during major inspection *Result* – improved safety margin during drills and accuracy of simulated conditions

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SOFTWARE EXPERIENCE

- Productivity – Skilled in all elements of MS Office (Word, Excel, PowerPoint, Outlook, Project, Access, Photo Editor), Corel WordPerfect, Lotus Notes, Web-Site Development (server driven with database)
- Technical –MatLab & Simulink, Scilab & Octave (numerical modelling), VB.Net, Qt, Protel Circuit Maker 2000, Altium Designer, Orcad Capture/PCB, Solidworks, ProE, Autodesk Inventor, OnShape, OpenFOAM (CFD), CF Design (now Autodesk Simulation CFD), Ansoft (now Ansys) Maxwell 2D/3D & RMXprt, Orcad Pspice, LabView, MPLAB, WinAVR, MS Visual Studio, Jscript/Nodejs/HTML, Mongoddb & MySQL, C/C++, Assembly Language Programming, embedded development tools, many more...
- Media – GIMP, Adobe (Acrobat, Photoshop, Illustrator...some After Effects & Premiere)
- Operating Systems – Linux (Ubuntu), MS DOS, MS Windows 95/98/2000/ME/NT/XP/7, Networking, Web Development

EDUCATION

Bachelor's Degree in Electrical Engineering

*University of New Haven - School of Engineering and Applied Science
West Haven, CT*

[GPA: 4.00/4.00 – Dean's List]

Graduate - Naval Nuclear Power Training Command

*Nuclear Power School (Orlando, FL)
Electronics Technician 'A' School (Orlando, FL)*

*[Rank: 26 of 246 – GPA 3.68/4.00]
[Rank: 1 of 13 – GPA 3.47/4.00]*

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Summary of Technical Background, Experience, and Skills [keywords]

Computer Systems

- Designed, built, maintain, and currently use a 5-node compute cluster using second-hand HP380DL server hardware.
- Setup remote access and management of a small development network including Ethernet and wifi.
- Developed several GUI style applications for personal use using VB and Qt incorporating OpenGL, WebGL, and dashboards to assist in starting/managing complicated third-party executables.
- Created a database driven web site incorporating automatic data logging, user access control, parts & assemblies organization and costs, and product configuration tools. Also implemented an 'auto simulation' tool that would automatically perform hundreds of simulations at various settings – saving results to a database for post-processing and evaluation.

Electro-Magnetics

- Designed new and evaluated existing AC induction motors for performance optimization.
- Designed, implemented, and used a 2500HP grid-tie dual VFD regen test bed including all instrumentation (temperature, AC power, vibration, air pressure, speed, etc).
- Designed, tested, and produced several specialized electro-magnetic linear actuators (voice coil actuators) including static and dynamic magnetic simulation, materials and performance optimization, and cost reduction.
- Versed in electro-magnetic theory of permanent rare-earth (NdFeB and SmCo) magnets, ferromagnetic materials with inherent B-H non-linearity, optimizing and modeling back EMF & eddy currents, modeling & optimizing thermal performance, and integrating unconventional magnetic materials.
- Versed in magnetic bearings construction and the associated electric control systems (servo control of shaft position)
- Design, simulation, and implementation of passive permanent magnet non-linear springs
- Familiarity with and hand-on use of magnetic Finite Element software tools such as Ansoft 2D/3D, Terra Analysis, Ansys, Cosmos

Rotary Machines

- Experience with all types of rotary electrical motors and generators (synchronous AC and asynchronous 'squirrel cage' motors up to 4MW, 1-phase and 3-phase machines and systems, DC motors up to 500 kW, 3-phase AC turbine-generator sets up to 4 MW, variable frequency drives for asynchronous motors up to 4MW, stepper motors and drives, BLDC motors and drives, reluctance motors)
- Designed and conducted Computational Fluid Dynamics (CFD) simulation/analysis on a Tesla Turbine design (self-inspired).

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- Self-inspired interest and study into combustion turbines (gas turbines, jet engines, propane combustors) as well as associated nozzle design and CFD
- Design, CFD, and construction/assembly of a small impulse turbine for personal education
- Implementation of numerous small motor drives for testing (both open-loop DC and steppers as well as closed-loop)
- Familiarity with air motors, hydraulic motors, swash-plate type pumps, hydraulic pumps, air compression technologies, internal combustion engines, compressed air turbines (up to 100,000 rpm)
- Self-inspired interest in rotary mechanical energy storage (flywheel) design and trade-offs

Fluid Systems

- Expert in fluid power technologies, design, use, integration, components, markets, etc to include system design, component design, component and system sales / marketing, competitive analysis of emerging technologies, holder of multiple patents & pending patents related to fluid power components
- Conducted numerous heat transfer and transient fluid flow analyses using CFD
- Experience with 1000psig & 3000psig oil-hydraulic systems, up to 4500psig compressed air systems, 1000psig water-hydraulic systems, up to 700psig steam systems, low and high pressure air-over-water hydraulic systems, vacuum systems, and all associated fluid energy components including valves, pipes, fitting, tubing gauges, pumps, motors, accumulators, etc
- Experience with several types of thermo-dynamic cycles such as Rankine cycles and refrigeration cycles; skilled in thermodynamic systems analysis and use of fluid property databases (steam tables, Mollier diagrams for various fluids, etc)
- Some experience with cryogenic fluids and applications
- Experience with several types of heat exchangers, construction and use

Electronics & Embedded Software Experience

- Embedded wireless designs (ISM band, ZigBee, FM) for remote device actuation, sensing, monitoring, and control
- Embedded C and assembly programming for Atmel and PIC families of micro-controller products
- Embedded products with HMI via LCD's and touch screens
- Home electronics work-bench with function generator, oscilloscope, DMM, soldering station, SMT soldering binocular scope, and supporting tools and equipment

Mechanical Experience

- Hands-on experience with solid modeling tools (Autodesk Inventor, Solidworks)
- Preparation of mechanical design for production by preparing drawings, procedures, specifying materials
- Hands-on use of countless hand-tools, power-tools, and powered machinery
- Concurrent integrated electro-mechanical design of various products involving moving parts,

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sensor, electronic circuits, controls, and mechanical interfacing

- Home machine shop

Control Systems Design and Implementation

- Embedded, battery powered, adaptive hydraulic damping systems and components using classical tools such as MatLab and Simulink (see Design News article regarding Cannondale Bicycle)
- Embedded low pressure medical gas flow control device functioning as a servo valve with embedded PIC micro-controller and integrated linear actuator and position sensor
- Automatic dynamic control of various physical processes (linear position, rotary position, tank pressure, gas mass flow controllers, force application) to include systems analysis and modeling (Simulink), control system theoretical design (Matlab, Simulink), implementation, and testing to include hardware-in-the-loop.
- Familiarity and/or use of various common control algorithms (PID, Kalman Filters, PVA, Adaptive Control, Gain Scheduling, Model-Reference Control, Sliding Mode, classical FIR and IIR filters, Analog filtering techniques, Lead/Lag compensators, etc)
- Multiple-input control systems and cascaded controls development

Manufacturing and Prototyping Technologies

- Machining (lathe, mill, bandsaw, drill press, CNC routers, CNC lathes, CNC milling, 4-5 axis machining centers, grinders, honing machines, swiss screw machines, etc)
- Designed, built, and use a 3-Axis Cartesian CNC router
- Injection molding
- Casting (lost core, investment, polymer resin)
- Rapid Prototyping technologies (SLA, FDM, etc)

Materials Science

- Familiarity and experience with numerous materials
 - Metals – most ferrous alloy steels (1018, 1045, 12L14, 1215), cast iron, aluminum alloys (2024, , 5052, 6061, 7075), copper alloys (brass 360, phosphor bronze 9XX), stainless steel (302, 303, 316, 416, 440C, Nitronic 60, 18-8, 17-4ph), exotics (Inconel 625, 650, 750, titanium)
 - Plastics – Nylon, Polyethylene, Acetal, Teflon, PEEK, Polycarbonate, ABS, PVC, PET
 - Other Non-Metals – glass, graphite, fiberglass, carbon fiber, epoxies, resins
- Versed in manufacturing, thermal performance, costs, and handling of various materials such as those above.

Government / Naval Experience

- Served aboard a sea-going nuclear powered submarine (USS Seawolf) as a nuclear propulsion plant operator and plant supervisor.
- Acted as a Nuclear Submarine Maintenance / Repair Depot liaison to interface between the Navy ships, shore-based naval repair organizations, and civilian repair technical expertise; worked closely with engineering and management at General Dynamics / EB to ensure timely,

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cost effective completion of complex maintenance activities aboard Naval assets.

- Director of a Nuclear waste water processing facility responsible for training, qualifications, and safe operation of the facility to process >5,000 gallons per month of radioactive waste water into pure water and thousands of pounds of radioactive waste by-products.
- Held a SECRET security clearance until separation in 2003; easily reinstated.

Education (of others)

- Served as an adjunct professor for the University of New Haven EE Department
- Spear-headed a 'first of its kind' course at the University involving robotics systems design, implementation, and construction
- Frequently sought out as a technical resource on a variety of subjects from a wide range of personnel (educators, students, academics, entrepreneurs, peers, and co-workers)