

Kirk Nangreaves

Bachelor of Science: Electrical Engineering

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SKILLS

Hardware Experience

- Broad circuit design experience: analog, digital, power & RF
- Experience with microcontroller, FPGA & DSP design, serial communications (CAN, RS-232, SPI)
- EMI analysis and optimization, design for test, design for manufacture
- Experience with PCB layout, fabrication, assembly and automated test.
- Experience in control systems & motor control design
- Extensive debug/bring-up experience: oscilloscope, spectrum analyzer, complex soldering

Software Experience

- Electronic design tools: OrCAD, Mentor, Altera Quartus
- System modeling and simulation: Simulink, Spice, Maple
- Data Analysis and performance characterization: Matlab, Labview
- Programming: embedded (PIC, Coldfire, VHDL), high-level (C++, Java), web (HTML, PHP)

Project Management

- Resource allocation, project scheduling, risk management
- Finding a way to do the seemingly impossible

Personality

- Strong organizational and leadership skills from both work teams and outside work activities
- Take pride in exceeding expectations with the goal of constantly improving
- Proven ability to perform in both individual and team environments
- Able to learn new skills and technologies quickly; appreciate every opportunity to do so

EMPLOYMENT

Continental Automotive

Senior Electrical Engineer

Dearborn, MI

Aug 2005 – present



- Lead designer of the system controller PCB for the electric powertrain (inverter and DC-DC modules) of a zero-emission fuel cell vehicle, including analog, digital and high-voltage power circuitry.
- Design to stringent requirements for EMC, temperature, vibration and reliability. Extensive experience in design for test and design for manufacture. Close interaction with software and firmware engineers as well as suppliers to ensure overall project success.
- Designed an automated test fixture for End-Of-Line testing as well as a Hardware-in-the-Loop fixture for control system optimization.
- Promoted in my first year with the company.

Honeywell Aerospace

Electrical Engineer

Mississauga, ON

Internship: 2004



- Involved in the design of a motor/generator controller and high-power inverter for the Boeing 787 main engines.
- Redesigned the climate control PCB of the Boeing C-17 to reduce cost, size and weight while improving performance.
- Experience with design and documentation to full military specifications.

EMPLOYMENT (cont)

Nuvation Engineering
Electrical Engineer

San Jose, CA
Internships: 2002,2003



NUVATION

- Took a complex, mixed-signal project through a full design cycle: concept, schematic, prototype, test, PCB layout and fabrication, bring-up and integration. Completed ahead of schedule and within budget.
- Assisted in the design of a fiber-optic polarization dispersion controller for 40Gbps optical networks.
- Received the highest possible performance evaluation: Outstanding.

MDS Sciex
Electrical Engineer

Concord, ON
Internship: 2001



- Prepared schematics and documentation to ISO 9001 standards.
- Designed digital boards and cable assemblies for mass spectrometers.
- Presented, discussed and justified designs at design review meetings.

EDUCATION

University of Waterloo
BSEE – Electrical Engineering

Waterloo, ON
June 2005



- Honors Bachelor of Science in Electrical Engineering (BSEE)
- Midnight Sun Solar Car Team Manager: As team manager, I was responsible for running the largest student project at U of W. I was also involved in building many of the car's electronic systems
- Design project: Completed hardware and software design of a smart energy meter: mixed-signal PCB with embedded PIC software

PATENT PENDING

- Patent application submitted for an electric vehicle power supply design for controller logic and isolated gate drivers, optimized for EMI and efficiency.

ACTIVITIES

- I am an avid cyclist. During the summer of 2001, I cycled across Canada.
- Referee in Chief, University hockey. Refereeing requires teamwork, leadership and communication while providing the challenge of making split-second decisions in a high-energy environment.
- I keep myself informed of the latest news and technologies in electrical engineering as a member of the IEEE.

AWARDS AND CERTIFICATIONS

- Champlain College Student Life Prize: For the graduating student most involved in improving student life on campus while maintaining excellent academic performance
- Bilingual: English/French
- Certified: First Aid, CPR and AED