AUSTIN COUSINEAU

7745 Country Lane • Whitby, ON, L1M 1N5 • austin.cousineau@uwaterloo.ca • 519-502-0756
1B Electrical Engineering - University of Waterloo

SUMMARY OF QUALIFICATIONS

- Proficient at programming in C# and Java
- Programmed Altera Cyclone II FPGA using VHDL in Quartus II
- Soldering and reworking using through-hole, and multi-pin SMT components with microscope
- Electrical circuit design, implementation and debugging microcontrollers, capacitor discharges, and high voltages/currents
- Experience working with oscilloscopes, logic analysers, and digital multimeters
- Several years of experience with Autodesk Inventor, AutoCAD, and Inventor Publisher Suites
- Exceptional analytical, problem-solving, collaboration skills, and a self-motivated learner

RELEVANT WORK

Electrical Team Member - Midnight Sun Solar Car Team (Sept. 2011 - Present)

- Researched various motor topologies & brands and performed a cost-benefit analysis
- Analyzed methods of active battery balancing, currently in preliminary design stage
- Developed soldering skills for SMT & through-hole components by attending tutorial sessions
- Programmed TI MSP430 microcontroller during tutorial sessions
- Designed PCB layouts using Altium Designer

3D Multiplexed LED Array - Personal Project (Sept. 2011 - Present)

- Hand soldered a large, complex 3D grid of 5mm LEDs using a custom jig
- Designed custom control circuitry using shift registers with I2C interface, and an ATmega1280
- Outlined control software to allow simple implementation of display algorithms

Linear Circuits and Devices - Linear Circuits Course (Sept. - Nov. 2011)

- Implemented and analyzed circuits involving resistors and operational amplifiers
- Explained electrical elements, their properties, and electrical anomalies differing from calculation
- Troubleshooting of circuits utilizing digital multimeters, power supplies, and oscilloscopes

Technological Report - Electrical Engineering Practice Course (Nov. 2011)

- Researched various tablet computers and analyzed their specifications to find a model suitable for educational purposes
- Created charts comparing specifications and identified superior values
- Analyzed data relevance and significance from student polling
- Referenced third party reviews to support conclusions
- Compiled a comprehensive report on the tablets with recommendations

AWARDS & CERTIFICATIONS

- President's Scholarship of Distinction, University of Waterloo, Waterloo, ON, August 2011 (for admission average over 95%)
- Nortel Networks Undergraduate Scholarship
- Andrew Foundation Scholarship (for highest graduating high school average)
- Gold Medal in the Engineering category at UOIT Science Fair, March 2009
  - Built and presented a Tesla Coil with an estimated 250 kV output
- G2 Ontario drivers license

WORK EXPERIENCE

Injection Molding Machine Operator

Komtech Enterprises — Pickering, ON, July – August 2011

- Increased manufacturing efficiency and output by following time saving routines
- Assisted in machine maintenance, set-up and troubleshooting
- Recommended process improvements and relayed ideas regarding rectifying quality issues
- Worked on large variety of machines and product lines and ensured product quality
- Jointly ran complex machines with co-workers

Cashier & Customer Service

Stroud Farms — Ajax, ON, Aug. 2007 – Nov. 2010

- Trained employees for food packaging and processing as well as cash register duties
- Served customers in a professional, helpful and courteous manner
- Frequently handled store closures in supervisor's absence

EDUCATION

Candidate for Bachelor of Applied Science — Waterloo, Ontario

Honours Electrical Engineering Co-op, University of Waterloo — Sep 2011-Present

Relevant Courses

Linear Circuits, Fundamentals of Programming (C#), Calculus for Engineering 1 & 2, Physics of Electrical Engineering 1 & 2, Discrete Math, Digital Circuits and Systems (VHDL, Quartus II), and Embedded Systems

Ontario Secondary School Diploma — Whitby, Ontario

Donald A. Wilson Secondary School — June 2011

Received Governor General's Academic Medal for highest overall average
Highest grade in: Calculus, Functions, Physics, Chemistry, Biology, Data Management, and Technological Design

ACTIVITIES AND INTERESTS

- Designed and built Tesla Coils, and linear accelerators using pulse capacitors
- Implemented and designed many projects using Arduino and PIC microcontrollers, such as multiplexed LED cubes and regulated power supplies
- Researched electric vehicle conversion from internal combustion engine vehicles as a member of DEVA (Durham Electric Vehicle Association)
- Enjoy participating in canoeing, hiking, camping, biking, swimming, and skiing