

# Lee Szuba

1A Electrical Engineering  
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## Current Address

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## SKILLS SUMMARY

- PCB design experience, designed MOSFET motor driver, headphone amplifier, robot using Altium Designer, National Instruments' Multisim and Ultiboard, and KiCAD
- Circuit fabrication and analysis skills including surface mount soldering, test equipment operation (oscilloscopes, logic analysers, DMMs, power supplies), and modeling in HSpice
- Mechanical design expertise; 3D modeling in Solidworks, AutoCAD, and AutoDesk Inventor
- CAM (MasterCAM) and CNC (EMC2) experience, running a small 3-axis milling machine
- Programming experience in C (embedded AVR8), Java, C#, Python, Visual Basic, Assembly (x86) and ladder logic
- Knowledge of electrical, mechanical and mechatronics systems developed through robotics experience
- Leadership ability demonstrated by robotics team, including financial and general management of a project
- Strong general computer skills, as well as competency with the Linux/Unix terminal and operating system
- Ability to see a project or job from start to finish, technical report writing skill
- Leadership ability demonstrated by robotics team, including financial and general management of a project

## EDUCATION

**Candidate for Bachelor of Applied Science, Honours Electrical Engineering**, Co-op Program, University of Waterloo, Waterloo, ON, September 2011 – present

**Ontario Secondary School Diploma**, R.H. King Academy, Toronto, ON, June 2011

Graduated with honours; Technacy Award for a student who has shown leadership in technology; Communications Technology - Technical Theatre award; Computer Engineering Technology - Robotics Award

## RELEVANT PROJECTS

**FIRST Robotics Team Leader**, RH King Academy Team 3590, Toronto, ON, January 2011 – May 2011

- Designed, manufactured and programmed a large competitive robot
- Multidisciplinary project, required CAD, mechanical design, circuit design, machining and Java programming
- Modeled a robot in Solidworks before building, including stress analysis of key parts
- Insured the project could be completed in a very short time frame with limited resources
- Awarded "Highest Ranked Rookie" at the Greater Toronto Regional, against over 40 teams

**Ontario Skills Robotics Team Leader**, Toronto East Team, Toronto, ON, October 2009 – May 2010

- Leader of four team members in the design, build, and programming of a robot to complete a complex predefined task
- Modeled the robot in Solidworks
- Presented the completed robot to judges in a mock interview
- Managed the intense time commitment alongside school, around 250 hours over 8 weeks through exams

**CNC Machine Retrofit**, RH King Academy, Toronto, ON, October 2009 – May 2010

- Retrofitted an old CNC milling machine
- Updated the control system by reverse engineering the old (70's) electrical system, designing and building new motor drivers with custom circuit boards
- Worked with a Linux based system to configure modern computer controls
- Designed and built a pneumatic coolant delivery system, integrated with the computer
- Learned CAM and CNC machining to operate the machine
- Wrote a technical paper on the operation and features of the machine for operators unfamiliar with machining, including documenting all changes and updates

**INTERESTS**

**Electrical Engineering Study**, With Dr. Robert Sobot, University of Western Ontario, London, ON, August 2010

- Studied electrical engineering, calculus and HSpice circuit analysis with Dr. Robert Sobot, a research professor at the University of Western Ontario
- Professor Sobot approached me based on my success at a robotics competition
- Studied and observed research projects for 10 days in the summer
- Shows commitment to engineering and intense interest in learning

**Robotics and Electronics**

- Worked with robotics since age 10, mainly for competition
- Won several awards at the OCAD University Sumo Robot Challenge
- Constructed 'Sumo' robots, design through programming, won gold medals several years in a row at the Canadian National Robot Games
- Won high school "Computer Engineering Technology: Robotics" award for highest average in the course (100%)

**Hobbies and Other Interests**

- Enjoy rock climbing, hiking, wilderness camping, biking, and woodworking

**WORK EXPERIENCE**

**Rock Climbing Instructor**, Toronto Climbing Academy, Toronto, Ontario, March 2008 – June 2011

- Instructed rock climbing in a fast moving and dynamic gym environment
- Managed groups of children; requiring strong leadership skills

**Landscaping**, Toronto, Ontario, July 2011 – August 2011

- Managed a fixed budget to excavate and re-lay a paving stone driveway
- Hired and managed help and kept moral up during the hottest week in the summer