

# Jake Nielsen

3B Mechatronics Engineering

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## Skills

**Languages** C, C++, **Objective-C**, Python, nodejs, Scheme, Assembly  
**Software and Technologies** ROS(recreationally), Visual Studio, **X-Code**, Vim, **Git**, Windows, Linux, **Mac OSX**  
**Embedded Systems** Arduino, AVR Microcontrollers, I2C, Experience Designing Control Systems

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## Education

2009 - Present **Candidate for Bachelor of Applied Sciences in Honours Mechatronics Engineering,**  
*University of Waterloo.*  
Relevant Courses: Designing Functional Programs, RTOS, Sensors and Instrumentation, Elementary Algorithm Design and Data Abstraction, RCL Circuits, Ordinary Differential Equations, Mechanics of Deformable Solids, Physics: Dynamics, Microcontrollers and Digital Logic, Control Systems

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## Work Experience

Sept 2012 - Present **Mobile Software Engineering,**  
*Rebellion Media Inc., Waterloo.*  
Developing iOS applications  
Writing backends using nodejs and mongoose  
Troubleshooting hardware in the event of test failures  
Configuring and uploading harddisk images to Sandvine's Policy Traffic Switches

Jan 2012 - Apr 2012 **Cofounder and Software Developer,**  
*Crouton Labs inc, Waterloo.*  
Made logical extensions to the vanilla iOS SDK to allow for automatic serialization of objects, and intelligent implimentation of the dispatcher design pattern  
Refactored aggressively, resulting in the most readable and stable codebase that I've ever worked with.

May 2011 - Aug 2011 **Manufacturing Software Engineering,**  
*Sandvine Inc., Waterloo.*  
Worked on the Manufacturing Engineering team  
Wrote and maintained testing scripts to ensure quality control  
Troubleshooting hardware in the event of test failures  
Configuring and uploading harddisk images to Sandvine's Policy Traffic Switches

May 2010 - Aug 2010 **Software and Hardware Developer,**  
*University of Waterloo.*

Sept 2010 - Dec 2010 Created control system for 200 stepper motors and reading from 200 pressure sensors  
Implemented firmware, software, and GUI for an experimental CNC lathe  
Produced firmware, software and pendant controller for a 3D scanner  
Received an outstanding on the work report evaluation

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## Projects and Competitions

**Computing Collective**  
(Co-founder) Worked on start-up that planned to commercialize the volunteer based grid computing space, winners of the Velocity Venture Fund competition.  
Involved in the software development of said platform in python.  
We sell processing power that we acquire through CPU scavenging in return for game upgrades and free software.

**VeloCity Entrepreneurial Incubator**  
(Resident) Returning resident at VeloCity, which helps students who are working on start-ups, by providing funding, mentorship and a collaborative environment.