

# Johnson (Sheng) Zhong

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**EDUCATION**      **University of Toronto**      2013 - Present  
Engineering Science (Robotics specialization) class of 2017  
GPA: 3.87/4.0

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**SKILLS**

- **Programming** | C++ | Python | C | Lisp | Git | SVN | Mercurial
- **Web development** | Django | HTML | CSS | Jekyll | Javascript
- **Visual Design** | Inkscape | Photoshop | SolidWorks

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**EXPERIENCE**      **FPGA CAD Routing Optimization**      Aug 2015  
Summer research – more at [johnsonzhong.me/projects/vpr](http://johnsonzhong.me/projects/vpr)

- Routing component of VPR under the Verilog-to-routing toolchain
- Up to **3x speedup** on difficult circuits through incremental rerouting
- Speedup scales positively with circuit difficulty
- Up to **30% faster circuits** produced through targeted rerouting of critical yet suboptimal connections

**Autonomous Interacting Robots**      Apr 2015  
Team of three – more at [johnsonzhong.me/projects/robot](http://johnsonzhong.me/projects/robot)

- Interacting mobile robots playing connect-4 on a randomized gamefield
- Responsible for microcontroller (Arduino) and all logic
- Fastest ball retrieval time (3 ball/min vs average 0.5 ball/min) through targeting randomly-located high-reward ball dispensers

**SAL - Algorithms and Data structures library**      Jan 2015  
Solo – more at [johnsonzhong.me/sal/](http://johnsonzhong.me/sal/)

- Header only C++ template library with an interactive tester
- Simple and clear implementations of efficient algorithms
- User friendly and practical introduction to algorithms (used by classmates)

**Language Interpreter (Lisp)**      Aug 2014  
Solo – more at [johnsonzhong.me/projects/clisp](http://johnsonzhong.me/projects/clisp)

- Small and fast at around 550 lines of C++
- Lexical scoping, first class functions, and tail recursion optimization
- Automated garbage collection with RAI

**IEEEExtreme Programming Contest**      Oct 2013 | 2014  
Team of three – Virtual Vagrants [placement](#)

- Solved algorithm-related programming challenges within 24 hours
- Placed **43/7500** (6<sup>th</sup> in Canada) in 7.0 | **52/unknown** (8<sup>th</sup> in Canada) in 8.0

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**INTERESTS**      | Hacking | Graphics Design | Chess | Badminton | Wushu |