Sean Purcell

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Skills

- Fluent in C/C++, Java, Python, Javascript, HTML/CSS, MATLAB.
- Thorough knowledge and understanding of algorithms and data structures.
- Advanced understanding of cryptographic algorithms and security principles.
- Experience in optimizing software for speed.
- Enjoys solving interesting and challenging problems.

Education

2015–2020 **Candidate for BSE (Software Engineering)**, *University of Waterloo*.

2011–2015 **High School Diploma**, *TOPS Program, Marc Garneau C.I.*, Toronto, ON.

2014 **A+, CS161 Design and Analysis of Algorithms**, *Stanford University*.

2014 **A+, CS143 Compilers**, *Stanford University*.

2014 **Certificate With Disinction, Cryptography I**, *Stanford University via coursera.com*.

Work Experience

Summer 2015 **Summer Intern**, *Sunnybrook Research Institute*, Toronto, ON.

Improved and created computer programs used in Medical Biophysics Research.

- Worked under Ph.D candidate on software used to facilitate Medical Biophysics Research.
- Optimized differential equation-solving simulator to operate twice as fast as original.
  - Worked with C/C++, using OpenMP and MPI for parallelization.
- Created GUI using Python to operate simulator for ease of use.
- Installed job scheduler on compute cluster to manage resource allocation.
- Managed compute cluster system administration and backups.

Awards and Achievements

Summer 2015 **Hacker, 2nd Place Team**, *Tech Retreat*, Waterloo, ON.

Created a mobile app to read resistance values off resistors using the phone camera.

- Learned and used Android Camera API, Mathematica.
- Wrote computer vision algorithms to recognize band locations and colours from scratch.

Spring 2015 **Gold Medalist, Canadian Computing Olympiad**, *CEMC*, Waterloo, ON.

5th place in Canadian Computing Olympiad, by the Centre for Education in Mathematics and Computing.

- Nation-wide High School algorithms and data structures programming contest written by over 3,500 students.
- Used knowledge in algorithm topics including graph theory and dynamic programming.