Sean Purcell

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Skills

- Experience in C, C++, Java, Python, ASM, 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*.

2014 **Student in Compilers and Algorithms Courses**, *Stanford University*.

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

Work Experience

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

Created, improved, and optimized software used in Medical Biophysics Research.

- Optimized differential equation-solving simulator to operate twice as fast as original.
  - Worked with 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

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 such as graph theory, dynamic programming, and run-time analysis.

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

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

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