

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 **Hacker, Winning Team (AnonymEyes)**, *Hack the North*, Waterloo, ON.
Built a location-based video streaming app for emergency response and evidence collection.
- One of the top ten hacks out of 235 entries.
 - Implemented custom video stream from Android to receiving server over UDP.
- 2015 **Gold Medalist, Canadian Computing Olympiad, CEMC**, Waterloo, ON.
5th place in the CCO, by the Centre for Education in Mathematics and Computing.
- National algorithms programming contest written by over 3,500 secondary students.
 - Used concepts such as graph theory, dynamic programming, and runtime analysis.
- 2015 **Hacker, 2nd Place Team (Resistora)**, *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.