

William Wen

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EDUCATION

University of Toronto | B.A.Sc in Engineering Science + PEY Co-op

Sept 2021 - April 2025 (Expected)

- Cumulative GPA: 3.76, Dean's List all semesters
- Major in Robotics Engineering and minor in Artificial Intelligence Engineering
- Relevant Coursework: Computer Algorithms & Data Structures, Digital & Computer Systems, Linear Algebra, Vector Calculus, Applied Fundamentals of Deep Learning, Praxis I, II & III (Engineering Design)

York Mills Collegiate Institute | Ontario Secondary School Diploma

September 2018 – June 2021

EXPERIENCE

Computational Geometry Algorithms Library (CGAL)

Google Summer of Code Developer

May 2023 - Present

- Implemented a point set denoising algorithm to improve CGAL's Point Set Processing package using **C++**
- Actively collaborated with mentors to ensure code conformed to developer guidelines
- Used **Doxygen** to generate high quality documentation for CGAL users and developers

Toronto Transit Commission

Signals Engineering Assistant

May 2023 – August 2023

- Created a log playback and decoder tool for the Automatic Train Control system to be used by **15+** engineers using **C++**, **Javascript**, **HTML** and the **p5.js** library
- Reduced the time required for incident investigations by **over 50%**
- Assisted with the commissioning of multiple work cars by conducting testing of the onboard signalling systems

University of Toronto, Elodie Passeport's Lab

Undergraduate Research Assistant

May 2022 - August 2022

- Accurately quantified thousands of microplastics in stormwater samples
- Automated data entry tasks using **Excel** and **VBA**, decreasing the time required for data entry by **over 70%**
- Developed a new standard operating procedure to manufacture microplastics for spike and recovery tests, able to produce samples over **100x faster** than the existing method

CLUBS & DESIGN TEAMS

aUToronto

Planning Team Lead

April 2023 - Present

Trajectory Planning Member

September 2022 - April 2023

- Led a team of **14 members** to develop the motion planner for an autonomous vehicle using **ROS2** and **C++**
- Used **Git/Gitlab** to collaborate across 8 other sub teams totalling over **100 active members**
- Created a comprehensive set of **unit tests** using the Google Test (gtest) library
- Presented aUToronto's planner at the SAE AutoDrive Challenge II, winning **1st place** in the Concept Design Event

PERSONAL PROJECTS

Motion2Music (NitinMa2/hack-the-north-2023)

- Created a program with a team of 4 to convert dance into music for Hack The North 2023
- Used **Python**, **OpenCV** and models from **MediaPipe** to do pose estimation to generate lyric prompts

Pathfinding Visualiser (wwenwilliam/pathfinding-stuff)

- Utilised **Java** with the Processing library to visualise various pathfinding algorithms
- Currently includes visualisations of BFS and A* searches

Project demos can be found at wwen.ca

SKILLS

Programming Languages: C++, C, Python, Java, Javascript, MATLAB, System Verilog, Assembly (RISC-V), VBA

Tools and Libraries: Git, WSL, ROS/ROS2, CMake, Docker, gtest, Doxygen, PyTorch, NumPy

Other Technologies: Linux, Fusion 360, CATIA, Quartus Prime