

# Simeng Yang

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## SKILLS

### PROGRAMMING LANGUAGES

- C / C++
- C#
- Java
- Python

### TOOLS AND TECHNOLOGIES

- Git
- HTML / CSS / JS
- PHP
- MySQL
- Android
- L<sup>A</sup>T<sub>E</sub>X
- SolidWorks
- AutoCAD

## EDUCATION

### UNIVERSITY OF WATERLOO

#### BASC IN MECHATRONICS

#### ENGINEERING

Expected May 2021

## COURSEWORK

- Digital Computation
- Data Structures and Algorithms

## AWARDS

### FACULTY OF ENGINEERING

#### ENTRANCE SCHOLARSHIP

University of Waterloo

- Awarded to top applicants to the faculty of engineering.

### CERTIFICATE OF DISTINCTION

The Centre for Education in Mathematics and Computing

- Awarded for scoring in the top 25 percentile for various mathematics contests.

## INTERESTS

- Swimming enthusiast
- Budding programmer
- Trading in Steam microeconomy
- Enjoying the outdoors

## PROJECTS

### STUDENT DATABASE MANAGEMENT SYSTEM

HTML, CSS, JS, PHP, MySQL

- Implemented a login-authenticated database to facilitate student registration into courses and manage student records.
- Developed the web interface from scratch, with database integration using **MySQL** and **Apache** and user-interactive dropdown using **JS**.
- Implemented robust input sanitation for text-fields using custom error-handlers and regular expressions in **PHP**.

### SKETCHIT! - NXT MINDSTORMS 2D PRINTER

C++, ROBOTC

- Implemented a printer to reproduce sketches from a set of 25+ points, built using NXT sensors, motors and a programmable brick microcomputer.
- Developed a graphical interface for plotting points through keyboard and mouse input, using the Horstmann Graphics library in **C++**.
- Coded the calibration and 3-axial operation of the printer with **ROBOTC**.

### SKITTLE SORTER AND DISPENSER

Arduino

- Designed an autonomous Skittle dispenser for allocating Skittles into separate bins, with motors, an RGB sensor and 3D-printed components.
- Synchronized the rotation of the feeding wheel and operation of the release shaft in **Arduino**.
- Optimized reliability of RGB-sensing by compiling consistency analyses for red, blue and green light from **Arduino** serial port data.

### PONG

Arduino

- Programmed multiplayer Pong on an 8x8 LED matrix with **Arduino**.
- Developed functions to efficiently toggle LED states of matrix.
- Debugged digital circuit with logic probes to validate output and connections.

## EXPERIENCE

### WARRANT OFFICER | 62 ROYAL HAMILTON LIGHT INFANTRY

Sep 2013 – Jun 2016 | Hamilton, ON

- Coordinated Cadet activities, including the fundraising of \$5,000+ towards the Cadet unit and participation in the city-wide Remembrance Day Parade.
- Awarded 'Most Outstanding Senior Cadet' and 'Top Master Cadet' for exceptional service.

### LIFEGUARD-IN-TRAINING | NATIONAL LIFESAVING SOCIETY

Sep 2015 – Jun 2016 | Hamilton, ON

- Created lesson plans for teaching children of varying swimming levels.
- Supervised a pool of 100+ swimmers under the guidance of a mentor lifeguard.

### TEACHING ASSISTANT | ST. PATRICK'S SCHOOL

Sep 2012 – Jun 2013 | Hamilton, ON

- Led and provided feedback for groups of students on a weekly basis, improving overall student performance in reading and writing.