

# Emily Hem

3A Computer Engineering

## CONTACT

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## SKILLS

4 Years: C++

3 Years: C, Python, HTML, CSS,  
JavaScript, PowerShell,  
Autolt, Bash

1 Year: Angular, SQL, Java

## EDUCATION

Candidate for Bachelor of  
Applied Science

*Expected Graduation 2023*  
Computer Engineering,  
University of Waterloo

Relevant Coursework:

- Fundamentals of Programming
- Algorithms and Data Structures
- Systems Programming and Concurrency

## ACHIEVEMENTS

Best IoT Hack, StarterHacks  
2018

Terms Dean's Honours List,  
Winter 2019

## EXPERIENCE

### Cloud Security Hacker

*Jan.-April, Sept.-Dec. 2020*

Agilicus Incorporated, Kitchener, ON

- Designed and implemented an API to retrieve user metrics from a columnar database (Druid) using **OpenAPI**, **Python**, and **SQL**
  - Set up a lookup table and mapped IDs to names using **Python**, **Kubernetes**, and **Bash**
  - Implemented a graphical user interface to provide visualization for the data using the **Angular** framework (**Typescript**, **HTML**, and **CSS**)
- Simplified user experience through the creation of 3 guiding steppers
- Redesigned convoluted data table into a simpler card-based display with a dialog action form
- Investigated and implemented a pagination strategy across multiple components in the backend (**Python**, **SQLAlchemy**) and frontend (**Angular**)
- Led a run-through of all components to debug and help the team understand the new user journey
- Coordinated changes in 13 components under active development to bring all company APIs into adherence with a standard

### Undergraduate Research Assistant

*Sept.-Dec.2019*

Software Verification with SeaHorn, Waterloo, ON

- Created models for functions in **C** Standard Library to improve the memory graphs that sea-dsa generates from LLVM bitcode

### System Quality Assurance

*May-Aug. 2019*

Virtek Vision International ULC, Waterloo, ON

- Automated file and configuration saving by modifying **C++** code to create a more intuitive workflow for the manufacturing team
- Organized workflow based on an Agile/Scrum environment

### Computing Assistant

*May-Aug. 2018*

University of Waterloo, Waterloo, ON

- Coded 6 slideshow widgets using **HTML**, **CSS**, and **JavaScript**
- Started a toolkit project using **PowerShell** and **Autolt** to automate tasks

## PROJECTS

### Midnight Tempo, <https://git.io/JL7Yy>

*Sept. 2020-Present*

- First-person rhythm game developed in **Unity** where the player's goal is to click on all the targets as they spawn according to the beat

### Smart Waste Management System, Hack the North 2019

*Sept. 2019*

- Developed an Android app in **Java** which connects to a Bluetooth enabled garbage bin to improve the sorting of waste

### EnableU, StarterHacks 2018

*Mar. 2018*

- Built and coded an Arduino 101 in **C** to control LEDs representing braille letters to address the gap in transport accessibility