

# Contact

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# Skills

## Languages

- C / C++
- SQL
- Java
- Kotlin
- Python
- Scheme
- JavaScript
- HTML / CSS

## Frameworks / Tools

- Node.js
- AngularJS
- React
- CUDA
- MongoDB
- Pandas
- Flask
- NumPy

## Other Skills

- Linux, Git, Jira
- Adobe Creative Suite

# Awards

## Hack the North

- Winning Team

## Canadian Computing Competition Senior

- 50th / 2144 Competitors

## York U Hacks

- WolframAlpha Prize

## ECOO-CS

- Finalist Award

# Education

Candidate for Bachelor's -  
Honours Computer Science  
University of Waterloo  
2018 - 2023

# Alex Shi

# Experience

## Software Developer Intern - Deloitte

May 2019 - August 2019

- Built **blockchain** applications in **Kotlin** and RESTful backend services with Spring Framework, **Hibernate** ORM, and H2 database
- Developed a highly-scalable **React** application with **Redux** that renders Chart.js data visualizations and brand new user interfaces
- Designed and implemented **Flask** APIs for anomaly detection using custom **machine learning** models in Python
- Streamlined the development pipeline, resulting in a **700% time reduction** on Gradle builds and accelerated the pace of feature implementation

## Path Planning Software Engineer - Watonomous

April 2019 - July 2019

- Worked in a student design team aimed at building a **level 4 autonomous vehicle**
- Developed **C++** simulation input modules for costmap parameter tuning
- Refined steering heuristics for **A\*** algorithm, resulting in **15% less collisions**

## Executive Member - Computer Science Club

September 2017 - May 2018

- Taught students **design thinking** and rapid prototyping principles
- Released tutorials for topics such as **advanced algorithms** and data structures
- Published solutions for competition problem sets onto club website

# Projects

## AutoDeck | Node.js, Express, React, GCP

- Built a slide deck creation tool that generates dynamic content from speech input
- Leveraged **Google Cloud NLP** for topic and entity extraction in sentences
- Created a Google Slides API client with **Express.js** that edits slide elements in real time

## N-body Galaxy | C++, OpenACC, OpenGL

- Built a **GPU-intensive** heterogeneous application with **OpenACC directives**
- Developed a physics engine for particle simulations rendered with **OpenGL**
- Achieved a **3300% performance improvement** compared to regular serial code

## E-Motion | Flask, Azure, SQLAlchemy

- Created a mental health progress journal that tracks user positivity over time
- Implemented a **Flask** API that handles accounts, journal entries, and calendars
- Utilized **Azure Cognitive Services API** for sentimental analysis

## Node.js Chat | Socket.IO, Bootstrap, MongoDB

- Developed a live chatroom application with **Socket.IO** and **Node.js**
- Implemented a frontend client using **Bootstrap** and **JQuery**
- Enabled messaging across multiple chatrooms stored with **MongoDB**