Charles Zhang

University of Waterloo | Candidate for B. Computer Science 2023

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Summary of Qualifications

- Professional front-end web development experience in Angular
- Three years' experience with Python and C++, two iOS apps published to the Apple App Store
- **Programming:** Python, C++, C, Swift, Unix scripting, Angular, Typescript, HTML, CSS, JavaScript
- **Technical**: Git, Jira, Dev-Ops, Docker, Xcode

Education

University of Waterloo – Waterloo, Ontario — Expected April 2023

- 93% GPA (Dean's Honours List), President's Scholarship of Distinction

Lisgar Collegiate Institute – Ottawa, Ontario — September 2014 – June 2018

- 98% GPA (Lisgar Silver Medal Recipient), enrolled in the gifted program

Work Experience

Software Development Intern, Ciena – Ottawa, Ontario — July 2018 – August 2018

- Updated Ciena's Budgeting Website's frontend using Angular 6, Angular Material, and TypeScript
  - Used CSS Flexbox to ensure responsive design across mobile and desktop platforms
  - Worked with Karma and Jasmine unit testing
- Automated the migration of over 80,000 files from the DOORS database to the new Jama database
  - Improved efficiency of finding and accessing files by over 10x
  - Used Python, Bash Scripting, DOS scripting, Database systems
- Gained experience with Dev-Ops, code reviews, agile development, software documentation

Projects

Article Generator iOS App — July 2018 – January 2019

- Created an iOS app in Swift that generates style-mimicking text using a Recurrent Neural Network
- Used Python, Keras, Tensorflow to train the model, CoreML to integrate the model into the app
- Gained experience with web scraping, data collection, and data sanitization
- Used XML and PLIST files to store model parameters

EzJigsaw IOS App — August 2017 – October 2017

- Built an iOS app that allows users to build customized Jigsaw games from their own images
  - Downloaded over 300 times in 6 different countries within the first month alone
- Used the SpriteKit graphics library to create the user interface
- Practiced the model-view-controller design pattern, project management, and version control

Tetris Neural Network — March 2017

- Developed an AI that plays Tetris using an Artificial Neural Network and a Genetic Algorithm
- Built a Tetris game simulator with a standardized API to allow programmatic interaction
- Used PyGame for graphical display and NumPy for game-state representation and computation

Arduino Development — October 2016 – January 2017

- Made an autonomous maze-solving robot based on the Arduino Microcontroller
- Implemented a custom depth-first-search algorithm to map and solve a physical maze