

# David Duan

Computer Science  
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## SUMMARY OF QUALIFICATIONS

- Extensive knowledge in Python programming and comfortable with popular libraries and various frameworks
- Acquired proficiency in JavaScript, C/C++, Scheme and SQL through related school courses and side projects
- Familiar with basic ML techniques (e.g., logistic and linear regression, SVM, neural networks, random forests)
- Practical experience with other languages and frameworks including C#, Java, SQL, Linux, Git, and more

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## PROJECTS:

- Typesetting Bot** – Word Document Generator with Auto-Typesetting 2018
- Designed and implemented a standalone command-line executable with minimal dependency in **Python**
  - Automated the process of generating word documents according to user-defined rules using **python-docx**
  - Automatically encrypted the output documents using **cryptoshop** in GCM mode with AES-256 algorithm
- Aleph** – Location and Status Sharing Web Application 2018
- Created web interface with frontend technologies including **HTML**, **CSS**, **JavaScript** and **Bootstrap**
  - Implemented backend through **Django** in Python and stored relevant data in a **MySQL** database
  - Encrypted login credentials and generated verification for friend request using **bcrypt** and **pycryptodome**
- Circle of Time** – Personal Daily Planner Application 2017
- Implemented the time planning Windows desktop application with **Visual C#** and **.NET WPF**
  - Presented users a straightforward visual model which represents 24 hours in one circle
  - Incorporated advanced features such as providing detailed analysis by keeping track of daily time usage
- Tower of the Sorcerer** – 2D Non-Linear Open-Ended RPG Game 2017
- Reimplemented the classic puzzle game in **Python** with original quests and a compelling storyline
  - Used **pygame** for GUI and other event-handling tasks including collision detection and animation
  - Designed and implemented a status-tracking algorithm to automatically adjust the level of difficulty
  - Maintained an external library to support user-defined map and customized character attributes

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## EXPERIENCE:

- Concertmaster** | Bernice MacNaughton High School Orchestra 2016 - 2017
- Communicated with the conductor about piece arrangement, personnel placement and more
  - Helped the music office plan out various events, including Christmas and end-of-year performances
  - Provided suggestions to section members about fingering, bowing and other instrument-related techniques
  - Handled unanticipated problems by motivating others and taking on multiple responsibilities at once

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## EDUCATION:

- University of Waterloo** 200 University Ave W, Waterloo, ON N2L 3G1
- Bachelor of Computer Science (Expected 2022)
- GPA: 3.9/4.0
  - President's Scholarship of Distinction, Mathematics Entrance Scholarship, Term Dean's Honours List.

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## AWARDS & ACHIEVEMENTS:

- 1st Place, Bill Davis Memorial Trophy | New Brunswick High School Programming Competition 2017
- Contest Medal, Certificate of Distinction | CEMC Euclid Mathematics Competition 2017
- 3rd Place Team, All Star Award | Southern massachusetts Conference Math League 2016