David **Xu**

1B SOFTWARE ENGINEERING · UNIVERSITY OF WATERLOO

+1 (949) 880-9412 | d83xu@uwaterloo.ca | dxaviud.github.io | dxaviud | dxaviud

Skills

Languages	**Java** (Most Familiar); **Python, C, C++** (Very Familiar); **Kotlin, JavaScript, HTML, CSS** (Prior Experience)
Technologies	Experience with **Git**, **Tkinter**, **Swing**, **OpenCV** and **Android Studio**
Other	Understanding of **object-oriented programming**, **pointers**, **algorithms** and **data structures**

Projects

ANTI-RONA LOCK SYSTEM ⬈ 　　　　　　　　　　　　　　　　　　　　　　　　　*Oct. to Dec. 2020*

- Assembled a mask and distance detection lock as a team of 5 to increase safety during the COVID-19 pandemic.
- Integrated the central components of our software using **Python**, **Tkinter** and **OpenCV**, resulting in a fully-functional project with a graphical user interface.
- Created a circular array **data structure** for easy navigation between previously processed images.
- Communicated effectively with every team member, allowing successful integration and completion of the project one week before the deadline.
- Debugged a key portion of our code successfully, preventing it from bringing our project to a halt.
- Derived the mathematical formulae for calculating distances between objects in an image and implemented them as functions.

CHESS ⬈ 　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*May to June 2019*

- Built Chess from scratch with **Java** and **object-oriented programming** principles.
- Created a complete graphical user interface with movement animations using Java **Swing**.
- Implemented undo/redo, saving/loading, and additional features.

WEBSITE ⬈ 　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Jan. 2021 to Present*

- Constructed personal website with **HTML**, **CSS** and **JavaScript** and deployed to GitHub Pages.
- Created a hamburger menu with animations using the **CSS** transform property.
- Embedded a video using the YouTube IFrame Player API.

GAMES ⬈ 　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*June to Sept. 2020*

- Implemented Ultimate tic-tac-toe using **Java** and Checkers, Connect Four and Tetris using **C++**
- Applied **object-oriented programming** principles.
- Employed **algorithms** for move/input validation, "Game over" checks, et cetera.

Experience

Kumon Educational Japan Co. Ltd. 　　　　　　　　　　　　　　　　　　　*Cambridge ON, Canada*
GRADER/TUTOR 　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*2017 to 2018*

- Graded thousands of student worksheets and guided dozens of puzzled students.

Awards

UWATERLOO PRESIDENT'S SCHOLARSHIP OF DISTINCTION 　　　　　　　　　　　　　　*2020*

- 95+ admission average

AP SCHOLAR WITH DISTINCTION 　　　　　　　　　　　　　　　　　　　　　　　　*2020*

- Scored 5 / 5 on all 5 of my exams

CAYLEY (MATH) CONTEST SCHOOL CHAMPION 　　　　　　　　　　　　　　　　　　　*2018*

- Scored top 1% out of 24,709 contestants

Education

University of Waterloo 　　　　　　　　　　　　　　　　　　　　　　　　　　*Waterloo ON, Canada*
CANDIDATE FOR BACHELOR OF SOFTWARE ENGINEERING 　　　　　　　　　*Sept. 2020 to Apr. 2025*

- 96.64 GPA