

# Jeffrey-Kai Li

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## SKILLS

### LANGUAGES

C++ • Python • Dart • Lisp/Scheme •  
Java • TypeScript • JavaScript •  
HTML/CSS

### FRAMEWORKS

Flutter • React • Node.js • Express.js

### SOFTWARE AND TOOLS

Git • GitHub • Firebase • Selenium •  
Windows • Unix • Bash • GoogleTest

## ACHIEVEMENTS

### HACK THE NORTH 2021

Winner of "Best Blockchain Hack" at  
Canada's largest hackathon with over  
1500 participants.

### CANADIAN COMPUTING COMPETITION 2022

Group 3 Honour Roll, placing in the  
top 3% out of 3000+ contestants.

### ONTARIO TOP SCHOLAR 2022

Awarded to the graduating students  
with the **highest academic average**  
across the region.

### HACK::PEEL

Helped to organize a region-wide  
hackathon with over 100 participants  
and \$20,000+ in prizes.

### PRESIDENT'S SCHOLARSHIP OF DISTINCTION

Entrance scholarship valued at  
\$2000.

### COLLEGIATE ESPORTS

Playing **competitive collegiate**  
**VALORANT** for University of  
Waterloo Gold.

## EDUCATION

### UNIVERSITY OF WATERLOO

#### BS IN COMPUTER SCIENCE

Sept. 2022 - Present | 3.94 GPA

**Relevant Coursework:** Object-Oriented  
Software Development, Elementary  
Algorithm Design, Tools and Techniques  
for Software Development

## EXPERIENCE

### HUAWEI | SOFTWARE DEVELOPER

May 2023 – Aug 2023 | Markham, ON

- **Optimized multiple advanced graph algorithms** by designing and developing various classes that utilized **modern C++ 20 features, STL/Boost data structures**, and **effective object-oriented design principles**
- Implemented and extended a **research-based graph algorithm** used to efficiently solve **complex FPGA routing problems**
- Wrote unit tests within **GoogleTest** that achieved **95%+ line coverage** for all newly developed code

### PEBBLE SHORE TECHNOLOGIES | SOFTWARE INTERN

July 2021 – September 2021 | Toronto, ON (Remote)

- Developed and designed a **full-stack Microsoft Teams application** for a startup
- Created **multiple responsive and user-friendly tab applications** using **Typescript**, with **React** used for the front-end
- Designed and implemented an integrated chatbot using **Power Virtual Agents**
- Commended for an ability to solve **complex coding and design challenges**

## PROJECTS

### TWS - THE WOODLANDS SCHOOL APP

- Created an **official mobile application** for the Woodlands Secondary School
- App client created in **Flutter** with a **Cloud Firestore** scalable **NoSQL database**, integrated with **FlutterFire**
- Developed song request page using a **RESTful API (Spotify Web API)**
- Peaked **#70** in Education on the Apple App Store

### EXER - CUSTOM BLOCKCHAIN-BASED CRYPTOCURRENCY

- Created a mobile application that paid users to walk in a custom cryptocurrency based on the **ERC20 blockchain**
- App client created in **Flutter** with a **Cloud Firestore** scalable **NoSQL database** and an **Express.js** backend to handle user transactions
- ERC20 blockchain deployed using **Ganache**, with **Web3.js/Truffle** used to interact with the blockchain
- Awarded "Best Blockchain Hack" at **Hack the North 2021**

### MACHINE LEARNING FLAPPY BIRD

- Designed and developed a custom Flappy Bird game in **Pygame**
- Implemented a **neuroevolution algorithm** using **NEAT** to create an agent that can play the game perfectly (infinite score)
- Created in **Python** with an **object-oriented structure and design**

### COMPETITIVE PROGRAMMING SOLUTIONS

- Repository of personal C++ solutions to difficult problems, including those previously used at the **International Olympiad in Informatics**
- Use of various advanced algorithms and data structures, such as **string hashing, centroid decomposition, segment trees, matrices, and binary lifting**

### GOOGLE MINESWEEPER BOT

- Script written in **Python** to automatically play Google's Minesweeper game, with **OpenCV** and **pytesseract** used to read the state of the screen