

# YUAN XU

+1-778-893-1215 | [yuanxu@alumni.ubc.ca](mailto:yuanxu@alumni.ubc.ca)  
<https://horatioxu.com/>

## OBJECTIVE

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To obtain a position that will enable me to use my strong programming and problem-solving skills, good educational background, and ability to work well with people.

## EDUCATION

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**University of British Columbia**

*Sep 2015 - May 2019*

*Fields of Study: Physics, Computer Science*

*Vancouver*

- Degree: Bachelor of Science

## SKILLS&COMPETENCIES

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- **Languages:** Java, C/C++, JavaScript, Python, TypeScript
- **IDE/Software:** IntelliJ, WebStorm, CLion, Pycharm, Latex, Excel
- **Front-end:** HTML5, CSS3, Django, Ajax, jQuery, Angular, Bootstrap
- **Back-end:** Node.js Express, Flask
- **Mobile:** Ionic, Android Studio
- **Data analysis:** Python, MATLAB
- **Database:** MongoDB, Oracle, MySQL
- **PaaS:** Heroku
- **Version Control:** Git, Github
- **OS:** Windows, Mac OS, Linux
- **Other Knowledge:** OOP, MVC, TCP/IP, Advanced Physics/Mathematics
- **Soft skills:** Team-oriented, Multi-lingual, Innovative thinking

## EXPERIENCE

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**M.O.K. Technology Inc.**

*Jan 2019 - Feb 2020*

*Software Developer*

*Vancouver*

*Official Website: <https://gotplans.ca/>*

Working in the tech team as a software developer to develop a mobile application based on the ionic framework and RESTful APIs. The key feature of the app is to allow users to create or join real-life activities, helping individuals meet new friends and explore the city.

- Designed and implemented the database collaboratively with other developers using MongoDB
- Involved in both front-end and back-end development with tools including Node.js, Angular, Python, Sass, and TypeScript, etc.
- Helped debug and perform code review, maintained a level of consistency in design and implementation, and improved the robustness of the project.

**Lumohacks – Canada's Ultimate Health Hackathon**

*Sep 2017 - Sep 2017*

*Front-end Developer*

*SFU, Vancouver*

- Worked closely in an agile team of four to design and innovate a website for individuals with insomnia which could record their sleeping data and generate reports about their sleeping quality weekly and monthly.
- Brainstormed with other team members to design the project, and managed time efficiently to build up the project demo within 24 hours.
- Involved in front-end development with HTML5, CSS3, jQuery, Bootstrap.

## Science Tutor

*Feb 2018 - Present*

- Helped students from both high school and university with science courses (mainly physics, math, Cs).
- Developed students' confidence and interest toward learning, and helped them better understand abstract theories and concepts.

## TECHNICAL PROJECTS

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### Java Chess Game

*Oct 2019 - Nov 2020*

*(Java, Java Swing, OOP, Immutability )*

A chess game that allows two players to play chess. The program is designed and implemented in Java using object-oriented principles, and the GUI is created via the Java Swing API.

- Independently designed and implemented the game engine based on the object-oriented design pattern.
- Immutable objects are used to increase the immutability and prevent synchronization issue, which reduces the conflicts among objects and allows for objects caching.
- The GUI is implemented with Swing components, and the program will be further improved by adding an AI via the minimax algorithm.

### Online Shopping System

*Jun 2018 - Jul 2018*

*(Java, JDBC, Java Swing, SQL, Oracle)*

The project is a collaborative work done by a team of four, designed and built a program via Java, SQL, and Oracle database to simulate an online shopping system. Various types of SQL statements were used to perform complex queries.

- Independently designed the database model and defined functional requirements for the project, implemented the database and SQL queries collaboratively with the team.
- Optimized the entity-relationship model of our database and fine-tuned some nested and looped SQL queries to reduce the query cost.
- Designed and implemented the GUI with Java Swing individually, and performed code review, testing, and debugging.

### Solar Tracking System

*Feb 2018 - Apr 2018*

*(C, Assembly, Microcontroller, Electronics)*

A well-designed system that enables the mounted solar panel to collect the solar power efficiently by adjusting the surface of the solar panel to remain perpendicular to the incoming sunlight during day time.

- Designed and implemented the system independently based on the MSP430 microcontroller under Linux system, which was coded in C and Assembly language.
- Programmed the microcontroller to send, receive and process signals to control the hardware (servo motors, Phototransistors, etc).
- Managed to design an algorithm using interrupts that enables motors to adjust the angle every 30 minutes, thereby keeping the microcontroller at low-power mode for most of the time to optimize power consumption.