


# Justin Xu

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iOS - Swift | Android - Kotlin | Java | C++ | C

JavaScript | TypeScript | React | Sass | SQL

## SKILLS

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- strong communication skills practiced through teaching and writing
- careful and detail-oriented approach ensures consistent high-quality work
- very fast learner with excellent mathematical problem-solving skills

## WORK EXPERIENCE

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### iOS/Android Software Developer

May 2019 — Aug 2019

Osellus Inc. | iOS - Swift, Android - Kotlin, Java, SQL

Toronto, ON

- developed and debugged new features in both iOS + Android for the flagship microlearning platform *Surge9*
- synced user account data with a central server, and persisted it locally with UserDefaults and Android SQL databases to maintain offline functionality
- added caching and algorithm improvements to reduce client-side processing time of synced data by 5x
- nominated for Co-op Student of the Year for extensive commitment to improving app performance, including independent research on efficient data representation in Swift

## MAJOR PROJECTS

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### Asteria

Dec 2019 — present

Neural Networks | TypeScript, React, Sass

- created a fast object-oriented multilayer perceptron library from scratch as part of an ongoing personal exploration of artificial intelligence
- designed a React web app for users to train their own networks while experimenting with hyperparameters such as learning rate and momentum

### Ulam Spiral

Nov 2016 — Feb 2018

Number Theory | Java

- mathematically derived a model to predict the locations of prime-rich lines on the Ulam spiral
- implemented a custom rendering program in Java to graphically verify the findings, and to create diagrams for the accompanying paper

## EDUCATION

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### University of Waterloo

Sep 2018 — present

Candidate, Bachelor of Computer Science (2023)

Waterloo, ON

- 4.0 cumulative GPA
- CS 246: applied decorator and observer patterns in a memory leak-free C++ implementation of Tetris
- active writer and social media manager for student publication *mathNEWS*

### IB Diploma Programme

Sep 2016 — Jun 2018

Turner Fenton Secondary School

Brampton, ON

- received Creativity, Activity, Service award (\$1000) for outstanding written reflections on extracurriculars
- led the chess club and team to record participation and a runner-up finish at a provincial tournament

## HACKATHONS

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- achieved 1<sup>st</sup> place at TurnerHacks 2018 for *TL;DR Bot*, a Slack bot that summarizes missed chat messages
- offered iOS, React, Git, and HTML advice to beginners as a mentor at UWaterloo StarterHacks 2020