




# Justin Xu

Python | C++ | C | iOS (Swift) | Android (Kotlin) | Java  
React | JavaScript | TypeScript | SQL | MongoDB | GraphQL

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 justin-j-xu

## SKILLS

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- strong communication skills built through teaching and creative 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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### Software Engineer Intern

May 2020 – Aug 2020

Wish | Python, GraphQL, MongoDB, TypeScript, React, SQL

Toronto, ON (remote)

- developed and tested new GraphQL query/mutation APIs for merchants to manage marketing campaigns, and integrated them in a React frontend
- A/B tested quality-of-life improvements to increase merchants' product uploads by 7.5%
- wrote cron scripts that efficiently query log tables to generate email reports and real-time dashboards
- prototyped a custom Pylint linter to automatically compute field projections for PyMongo queries, which will reduce latency and network traffic

### iOS/Android Software Developer

May 2019 – Aug 2019

Osellus Inc. | iOS (Swift), Android (Kotlin), Java, SQL

Toronto, ON

- developed and debugged new iOS and Android features for a flagship microlearning platform
- synced user account data online and persisted it locally to maintain offline functionality
- added caching and algorithm improvements to reduce client-side data processing time by 5×
- 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 | C++, Python, TypeScript, React

- created a fast object-oriented multilayer perceptron library from scratch
- designing a web app to demonstrate character recognition models

## EDUCATION

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### University of Waterloo

Sep 2018 – present

Candidate, Bachelor of Computer Science (2023)

Waterloo, ON

- 95.25% cumulative average
- CS 241: won the course challenge to implement the most optimal compiler (Winter 2020 term)
- writer for publication *mathNEWS*; works include a series on 25 famous mathematical constants

### International Baccalaureate 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 to its highest-ever member turnout and a runner-up finish at a provincial tournament
- placed first at TurnerHacks 2018 for a Slack bot that summarizes missed messages