Justin Xu

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

✉ justin.xu@uwaterloo.ca   📞 (647) 918-7099   ⬛ xujustinj   in justin-j-xu

SKILLS

- 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

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

Asteria
Dec 2019 — present
Neural Networks | C++, Python, TypeScript, React

- created a fast object-oriented multilayer perceptron library from scratch, and developed accompanying command line tools
- currently designing a web app for users to interactively training and test models

EDUCATION

University of Waterloo
Sep 2018 — present
Candidate, Bachelor of Computer Science (2023)   Waterloo, ON

- 95.25% cumulative average
- CS 246: applied decorator and observer patterns in a memory leak-free C++ implementation of Tetris
- CS 241: won the course challenge to implement a compiler with the smallest output
- 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 '18 for a Slack bot that summarizes missed messages