

# TYLER NYCHKA

## SOFTWARE ENGINEER

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Software programmer with 4 years of full-time experience in building and maintaining performant back-end applications. Professional experience with **C++**, **Java**, **Python**, **Kotlin**, and **JavaScript**.

## » SKILLS

### LANGUAGES

C++  
Python  
Java  
Kotlin  
JavaScript

### TOOLS

Node.js  
Kotlin Multiplatform  
Jenkins  
Docker  
Unix  
Git/Perforce

### TECHNOLOGIES

Distributed Systems  
Concurrency  
Software Architecture

## » AWARDS

### CHIEF SCOUT'S AWARD Scouts Canada Aug. 2014

The highest award that can be achieved at the Scout level in Scouts Canada. Awarded for outstanding Citizenship, Leadership, and Personal Development.

### PRESIDENT'S SCHOLARSHIP OF DISTINCTION University of Waterloo Sept. 2015

Awarded for Admission average over 95%.

## » EDUCATION

**UNIVERSITY OF WATERLOO**  
Bachelor of Software Engineering BSE 2020  
Dean's Honour List: 3.8/4.0 GPA

Sept. 2015 - Apr. 2020

## » EMPLOYMENT

### RELIC ENTERTAINMENT Programmer Core Engine Audio Team

Vancouver, Canada · May 2020 - Present

- Created features and fixes with the Core Audio and Core Gameplay engine teams for the Age of Empires 4, Company of Heroes 3, and Essence Engine projects.
- Collaborated with Audio Designers to implement new essential audio features for Gameplay, Music, Speech, and Tools systems - essential to achieving ESRB targets, Age of Empires 4 Canadian Game Awards Best Audio nomination, and best soundtrack award.
- Refactored Core Audio object management system to enable event throttling, reducing extraneous incoming audio events by 75%.
- Worked with multiple teams during the final stage of Age of Empires 4 production to achieve gold standard certification.

### MARCONI PROTOCOL Software Engineering Co-op

San Francisco, United States · Sept. 2019 - Jan. 2019

- Iterated on **Golang** distributed **Blockchain** networking code to implement ranked discovery of peer service nodes in the Marconi Blockchain Network.
- Implemented **Socks5** client API for **React-Native** app communication with **Golang** service nodes.
- Created **Bash** deployment script for Marconi products for major client demo, and subsequent implementation into the continuous deployment pipeline.

### COGNITE AS Software Engineering Co-op

Oslo, Norway · Jan. 2019 - Apr. 2019

- Designed and implemented **Java** parallel retrieval API for concurrent retrieval of data; data lookup execution times transformed from multiple days into under an hour.
- Developed **Databricks** and **Spark** scripts to process and evaluate database consistency using concurrent retrieval API.
- Created a comprehensive **Python** integration testing suite for the **Jenkins** deployment pipeline; added randomized testing methods to integration tests and identified 10+ server errors.

### RELIC ENTERTAINMENT Gameplay Programmer Age of Empires IV - Co-op

Vancouver, Canada · May 2018 - Aug. 2018

- Optimized and expanded in-house **C++14** Essence Game Engine API, enabling vital developments for multiple major gameplay features central to the title Age of Empires IV.
- Designed and implemented dynamic telemetry data structures to capture insights from gameplay; added 12 new data points to and enabled easy addition of new data point tracking by data analysts.
- Rewrote legacy code to implement modern **C++14** features; reduced optimized files' size by 90% and increased the performance of the Essence Engine to Lua API.
- Wrote documentation detailing the architecture and usage of the Essence Engine Telemetry System. Additionally updated existing documentation by modifying 30+ Confluence documentation pages.

### AUTODESK Fusion360 Software Engineering - Co-op

Montreal, Canada · Sept. 2017 - Dec. 2017

- Developed multiple features and refactored code architecture of user management for the in-browser 3D modelling software Fusion360 Web using **Node.js** and **C++**.
- Created Jenkins pipeline for continuous integration; resolved 3 production crashes with a suite of 50+ automated **Mocha.js** tests and the introduction of pre-submit code linting.
- Integrated crucial security scans into **Jenkins** deployment pipeline, catching and fixing 50+ major security vulnerabilities including cross-site scripting.

### ICF OLSON Full-Stack Developer - Co-op

Toronto, Canada · Jan. 2017 - Apr. 2017

- Designed and implemented new **Java** server endpoints using **Springboot** and **Hibernate** to securely query databases to retrieve server status and guest information.

### HELPFUL.COM Full-Stack Developer - Co-op

Toronto, Canada · May 2016 - Aug. 2016

- Prototyped iOS **Swift** app and backend **Java Springboot** server using agile development to create a minimum viable product.

## » PROJECTS

### HABITICA ANDROID/IOS - MUTLIPLATFORM MIGRATION + OFFLINE MODE

May 2019 - Present

- Created fork of Habitica beginning the process of refactoring **Android** and **iOS** application architecture to use a shared multi-platform code library.
- Implemented restructuring with **Kotlin Multiplatform** spanning 500 files and 8000 lines of code.
- Designed an offline mode for synchronization of local and global databases in the event of a loss of connectivity.

### HABITICA - CONTRIBUTOR

Jan. 2016 - Present

- Contributed to the Habitica project, an open-source website designed around the gamification of tasks to increase productivity using **JavaScript** with **Vue.js**, **Node.js**, **Express.js**, and **MongoDB**.
- Submitted multiple approved and merged pull requests fixing synchronization errors and adding a new API token reset feature into production.