# TYLER NYCHKA
## SOFTWARE ENGINEER

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## ABOUT

A Software Engineering student specialising in Back-end development, and Programming for efficiency.

## SKILLS

### LANGUAGES

C/C++
Node.js
Javascript
HTML5/CSS3
Lua
Unrealscript
Python
Java
Scala
C#

### TOOLS & TECHNOLOGIES

Git
Perforce
Jenkins
Docker
Spring
Mocha
Express.js

## EDUCATION

### University of Waterloo
Bachelor of Software Engineering 2020
Recipient, University of Waterloo President's Scholarship of Distinction for admission average over 95%

### Twin Lakes Secondary School
2011 to 2015
Recipient, Top Academic Average (98%)
Recipient, Y's Men's Service Club of Orillia Scholarship for exemplary leadership and academic skills

## INTERESTS

Sketching

Dungeons and Dragons · Dungeon Master
August 2018 to Present

Weightlifting

Nicolas Cage

Guitar

## EMPLOYMENT

### Relic Entertainment - Associate Gameplay Programmer: Age of Empires 4
May 2018 to August 2018 · Vancouver

- Worked as an Essence Engine and gameplay programmer for the upcoming title: Age of Empires 4.
- Collaborated with Leads, Designers, and Artists to create and implement new features into Essence Engine's API for use by gameplay Lua scripts.
- Designed, built, and fully implemented production features central to gameplay using C++ and Lua.
- Rewrote legacy C++ code to use modern C++11 features such as templating, varadic arguments, and universal references reducing the size of these files more than 90% and increasing memory, performance, and code stability of the Engine to Scripting API.
- Built State Tree telemetry tracks, enabling easy access to tracking of data events fired in gameplay state trees adding several new data points for tracking into telemetry data.
- Wrote documentation for the Essence Engine Telemetry System detailing both architecture and usage of the system, additionally updated existing documentation. Deleted, updated, and added 30+ confluence documentation pages.
- Performed Perforce integrations and submits using the mainline model to ensure stability across all Relic projects.

### Autodesk - Fusion Backend Developer
September 2017 to December 2017 · Montreal

- Used Node.js and C++ to develop features and refactor code for the in-browser 3D modelling software Fusion360 Web, allowing for easier development.
- Integrated crucial security scans into deployment pipeline, catching and fixing 50+ major security vulnerabilities including cross-site scripting in the process.
- Created Jenkins pipeline for continuous integration, speeding up the deployment process by adding both automated testing and linting to the code submission process.
- Implemented Github code review bot for more efficient continuous integration.

### ICF Olson - Full-Stack Developer
January 2017 to April 2017 · Toronto

- Created and delivered content updates using a variety of content management systems to major ICF olson clients including OLG, Boston Pizza, and Nestle.
- Developed software to maintain and report on important server components and system information, decreasing response time to errors by up to 24 hours.
- Built and Implemented new server endpoints with Spring to deliver server status information and guest information.
- Implemented endpoints using Spring and Hibernate to quickly and securely query databases.

### Helpful - Full-Stack Developer
May 2016 to August 2016 · Toronto

- Developed front-end iOS application and back-end Java Spring software using the full agile development process.
- Created bash scripts and test suites to aid in deploying continuous back-end integration; decreased deployment time by up to a week for software teams.
- Optimized critical server endpoints by refactoring code to reduce response time by up to 200ms.

## PROJECTS

### XCOM 2: Long War Of The Chosen - Lead Mod Developer
November 2017 to Present

- Lead Developer on a team of more than 15 members dedicated to moving and expanding the Long War 2 modification for XCOM 2 to the War of the Chosen DLC.
- Collaborate with both the internal Creative team and Design team to bring new features and assets into the modification.
- Manage both new and experienced developers through the full agile software design process to implement new designs and fix bug reports.
- Deploy new packages on a regular schedule for alpha testing and balancing.

### Habitica - Open Source Contributor
2016 to Present

- Contributed to the Habitica project, an open source website designed around gamifying tasks to increase productivity.
- Multiple merged pull requests fixing synchronization errors and implementing a new API token reset feature into the deployed product.
- Continuing contribution through bug fixes and feature implementations to improve the project's user experience.

### Genetic Soldiers
May 2016 to August 2016

- A C++ experiment in genetic algorithms designed to find a pattern that consistently defeats a basic AI opponent.
- Created chromosome representation of AI strategy to breed new generations of AI strategies; learns to defeat an opponent in a minimal number of new generations.
- In fewer than 10000 generations creates a perfect AI that always plays the optimal strategy.