TYLER NYCHKA
SOFTWARE ENGINEER

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ABOUT

A Software Engineering student specializing in backend development, and programming for efficiency.

SKILLS

LANGUAGES

C++
JavaScript
Python
Scala
Matlab
Lua
UnrealScript
C
Java
SQL
HTML5/CSS3

TOOLS & TECHNOLOGIES

Git
Perforce
Node.js
Express.js
React.js
Firebase
MongoDB
Springboot
Mocha/Chai/Sinon
Jenkins
Docker
Unix Systems

EDUCATION

University of Waterloo
Bachelor of Software Engineering
2020
Recipient, University of Waterloo President's Scholarship of Distinction for admission average over 95%
Dean's Honour List
3.7 GPA

Twin Lakes Secondary School ·
2011 to 2015

INTERESTS

Sketching and Traditional Art

Dungeons and Dragons ·
Dungeon Master

Weightlifting

Nicolas Cage

EMPLOYMENT

Relic Entertainment - Gameplay Programmer Age of Empires IV
May 2018 to August 2018 - Vancouver

- Optimized and expanded the in-house **C++17** Essence Game Engine API, enabling development of multiple major gameplay features central to the upcoming title, Age of Empires IV.
- Designed and implemented software architecture for state tree telemetry tracks; added 12 new data events to gameplay state trees and enabled easy addition of new data point tracking by non-programmers.
- Rewrote legacy code to use modern **C++** features such as templating, variadic arguments, and move semantics; reduced optimized files' size by 90% and increased the performance of the Essence Engine to **Lua** Scripting API.
- Collaborated with Software Leads, Designers, and Artists to design, build, and put into production 3+ well-received features central to core gameplay using **C++** and **Lua** scripting.
- 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 Backend Developer
September 2017 to December 2017 - Montreal

- Developed multiple production features and refactored code architecture of user management for the in-browser 3D modelling software Fusion360 Web using **JavaScript** with **Node.js** and modern **C++**.
- 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, avoiding 3 potential production crashes by adding a suite of 50+ automated **Mocha.js** tests and linting code during the submission process.

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

- Created and delivered time-sensitive product updates using a variety of content management systems to major ICF Olson clients including Nestle, Boston Pizza, and OLG.
- Developed **Python** scripts to maintain and report on important server components and system status, decreasing error response time by up to 24 hours.
- Built and implemented new **Java** server endpoints using both **Springboot** and **Hibernate**, quickly and securely querying databases to deliver server status and guest information.

Helpful.com - Full-Stack Developer
May 2016 to August 2016 - Toronto

- Rapidly iterated on front-end iOS application built in **Swift** and backend **Java Springboot** server using the agile development process to achieve the minimum viable product.
- Optimized critical server APIs and solved stop-the-world issues by refactoring endpoint code to reduce response time by up to 200ms.
- Created bash scripts and test suites to implement continuous integration; decreased deployment time by 1 week.

PROJECTS

XCOM 2: Long War Of The Chosen - Lead Mod Developer
November 2017 to September 2018

- Lead a team of more than 15 members dedicated to porting the Long War 2 modification for XCOM 2 to the War of the Chosen DLC and expanding features.
- Collaborated with both the internal Creative and Design teams to bring new features and assets into the modification using **UnrealScript**.
- Ported original Highlander implementation of Long War 2 to use Community Highlander, enabling other community mods to run in parallel with Long War 2.
- Regularly deployed mod packages for alpha testing and balancing, implementing feedback into the game.

Habitica - Open Source Contributor
January 2016 to Present

- Contributed to the Habitica project, an open source website designed around gamifying 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 implementing a new API token reset feature into the deployed product.
- Continuing contribution through bug fixes and feature implementations to improve Habitica'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, which learned to defeat an opponent in a minimal number of new generations.
- Created an algorithm to breed a perfect AI in fewer than 1000 generations which always plays the optimal strategy.