# TYLER **NYCHKA** <span>SOFTWARE ENGINEER</span>

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## SKILLS

### LANGUAGES

C++
Python
Java
JavaScript
Scala
SQL
Matlab
Lua
UnrealScript

### FRAMEWORKS

Spark
Springboot
Node.js
Vue.js
Mocha/Sinon/Chai
Express.js

### TOOLS

Git
Perforce
Docker
Jenkins
Unix
MongoDB
Maven
Pytest
Tavern

## EDUCATION

**University of Waterloo**
Bachelor of Software
Engineering BSE 2020
Distributed Computing,
Artificial Intelligence,
Software Architecture
Databases

## INTERESTS

Graphics

Artificial Intelligence

Sketching and Traditional Art

Dungeons and Dragons ·
Dungeon Master

## EMPLOYMENT

### Cognite AS - Backend Software Engineer     Jan. 2019 to Apr. 2019 - Oslo, Norway

- Created **Java Springboot** API endpoints to enable concurrent retrieval of data by parallel workers, reducing the time of a full database read by 13,200%.
- Built complete **Pytest** and **Tavern** integration testing suite into the **Jenkins** deployment pipeline, adding 1000 API contract enforcement tests.
- Developed **Python** and **Spark** scripts to process **Spanner** and **ElasticSearch** database contents, enforcing eventual consistency between the databases for more than 2 million items.
- Deployed **Docker** images to **Kubernetes** pipeline, enabling distributed verification of all commits to production through the **Python** test suite.

### Relic Entertainment - Gameplay Engine Programmer  May 2018 to Aug. 2018 - Vancouver

- Expanded and optimised the in-house **C++17** Essence Game Engine, enabling the development of major gameplay features central to the upcoming title, Age of Empires IV.
- Designed and implemented new software architecture for data collection from game AI, enabling easy addition of new data point tracking by designers and artists in **Lua** gameplay scripts.
- Rewrote legacy code to use modern **C++** features such as templating, variadic arguments, and move semantics, reducing lines of code by 90% and improving performance of the **Lua** Scripting API.

### Autodesk - Backend Software Engineer     Sep. 2017 to Dec. 2017 - Montreal

- Developed production API features and refactored code architecture of user management for the in-browser 3D modelling software Fusion360 Web using **JavaScript**, **C++**, and **Node.js**.
- Integrated crucial security scans into deployment pipeline, catching and fixing 50+ major security vulnerabilities.
- Created **Jenkins** pipeline, a suite of 50+ automated **Mocha.js** tests, and linting process for continuous integration in an effort to improve developer experience and productivity.

### ICF Olson - Full-Stack Software Engineer     Jan. 2017 to Apr. 2017 - Toronto

- Implemented new **Java** API endpoints using both **Springboot** and **Hibernate** to securely query server status and guest information.
- Developed Python alert infrastructure for server status, decreasing error response time by 24 hours.

### Helpful.com - Full-Stack Software Engineer

- Implemented MVP **Swift 3** iOS app and backend **Java** server from scratch for new startup product.

## PROJECTS

### Habitica - Open Source Contributor     Jan. 2016 to Current

- Implemented a new API token reset feature to improve security for users with compromised tokens.
- Improved synchronisation of user data between client and the MongoDB server.

### Long War of the Chosen: XCOM 2 Mod - Lead developer     Nov. 2017 to Sep. 2018

- Lead a team of more than 15 members dedicated to porting the Long War 2 modification for XCOM 2 to the new War of the Chosen DLC.
- Ported Highlander architecture of Long War 2 to a community architecture, enabling other mods to run in parallel.

### Spherical Field Raytracer     Feb. 2019 to Current

- Developed a ray-tracer in **C++17** to render light and shadows for a field of 100 spheres composed of different materials including plastic, metal, and glass.

### Genetic Soldiers     May 2016 to Aug. 2016

- Created chromosome representation of game strategy in **C++** to breed new generations of AI, achieving the optimal strategy to a simple game in fewer than 1000 generations.