

Shehryar Assad

Software Engineering at University of Waterloo

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shehryar.me



Skills

Languages: C++, C, Java, JavaScript, HTML, CSS

Technologies: Node.js, React.js, React Native, Ionic, Docker, Heroku, MongoDB, Firebase, SQL, GraphQL, Git

Work Experience

Faire – Software Engineering Intern

May 2019 – August 2019

- Details coming soon!

Manulife – Software Engineering Intern

June 2018 – September 2018

- Deployed interactive real-time dashboard to analyze **1,000+ production applications** in **React.js**
- Captured and analyzed 100,000+ entries of raw pipeline metadata using regex and SQL
- Architected **Node.js** script to simulate user load on LDAP servers, **reducing user simulation time by 83%**
- Redesigned token authentication flow in Bash, allowing for a fully automated production environment
- Optimized cache storage parameters for LDAP servers, leading to a **15% decrease in user query time**

Neoterix Health and Fitness – Backend Developer

May 2017 – September 2017

Healthcare startup, part-time

- **Decreased live video chat latency by 80ms** in WebRTC by optimizing codec definitions and removing FECs
- Configured A/B testing mechanisms using AlephBet.js, leading to a **35% increase in user retention rate**
- Deployed **CRUD back-end** in Node.js with user authentication and password hashing using JWTs and bcrypt.js

Projects

Falcon – C++, curl, websocketpp, jsonpp

An autonomous cryptocurrency trader to detect real-time triangular arbitrage patterns

- Wrote **multithreaded network library** to fetch live prices from multiple cryptocurrency exchanges using **HTTP/TCP**
- Developed **statistical models** that consider weighted moving averages, public perception, and technical analysis
- Created NLP algorithm to analyze blog posts and tweets about stocks by building an **HTML parsing tree**
- Implemented **genetic AI** to dynamically optimize decision parameters and automatically buy and sell currency

Firefly – C++, GLFW, OpenGL, Catch2

A cross-platform high performance game engine with parallelism support

- Wrote game engine and fast matrix math library in C++, with **underlying parallelism** support using **SIMB** policies
- Developed core game engine logic including key events, shaders, buffers, and batch renderers

Vaccinaire – C++, Arduino, Raspberry Pi

An autonomous drone to deliver vaccines and essential medicine to remote places

- Developed and printed optimized circuit board using Fritzing to interface with Arduino Nano and onboard sensors
- Wrote C++ flight controller to provide **real-time stabilization control** using accelerometer and gyroscope data

Confluence – Node.js, Java, React, WebSocket, Docker, Heroku

A distributed computing approach to training genetic AIs: **3rd** at Waterloo Engineering Competition

- Implemented evolutionary AI in Java and later refactored to JavaScript to distribute tasks to browser instances
- Trained genetic AI over a distributed network of computers, **reducing total training time by 73%**
- Developed Node.js WebSocket server to distribute and reassemble data, later packaging into Docker image

InforMGCI – Node.js, Java, React, WebSocket, Docker, Heroku

An app to promote school events, clubs, and announcements to uninformed students

- Developed real-time hybrid mobile app in Ionic to serve school information to **500+ daily active users**
- Implemented local caching to reduce boot time, integrated OTA updates and push notifications with **Firebase**

Education

Bachelor of Software Engineering – University of Waterloo

September 2018 – Present

Awards: BMO Entrance Scholarship, President's Scholarship, MAX Gala Winner

cGPA: 3.5 (80%)