# Josh Friedson, Software Engineer

U.S. Citizen based in San Diego, CA

GitHub.com/jfriedson | LinkedIn.com/in/JoshFriedson | JoshFriedson.com | Business@JoshFriedson.com

---

## PROFESSIONAL EXPERIENCE

---

**Software Engineer**                                                                 Nov 2022 - May 2024
*JPMorgan Chase & Co.*                                                                          *Columbus, OH*
*Skills: Java, Spring Boot, Spring Web Services, OpenAPI, JPA, Oracle Database, JUnit, Mockito, Maven, Linux, Docker, Kubernetes, AWS, Splunk, MQ, Kafka, Git, Jenkins, Agile, Scrum*
- Authored and maintained Spring Boot web apps' functionalities utilizing OpenAPI, Oracle Databases, MQ, and Kafka
- Containerized apps with Docker, managed scaling with Kubernetes, and migrated from a private cloud to AWS
- Contrived JMeter scripts for performance testing of web apps, conducted testing on BlazeMeter, and utilized Dynatrace, Grafana, and Splunk to collect and analyze metrics for performance and cost optimization
- Evaluate app resiliency using Gremlin, BlazeMeter, and ChaosMonkey
- Upgraded JDK and dependencies versions for Spring Boot apps while retaining functionality and increasing unit test coverage

**Intern Engineer**                                                                   June 2016 - Aug 2016
*Kenautics*                                                                                     *San Diego, CA*
*Skills: Product Design, Client-centric Innovation, Java, Android SDK*
- Collaborated with San Diego Harbor Police to discover ways of improving handheld diving equipment with the prospect of upgrading the underwater experience for professional divers
- Designed and began development of a Java Android app for an underwater handheld navigation device

## EDUCATION

---

**BASc, Computer Science**                                                            Aug 2017 - May 2021
*San Diego State University*                                                                    *San Diego, CA*
- Successfully completed upper division electives in Artificial Intelligence, Wireless Networks, Computer Security, and Database Theory and Implementation

## CERTIFICATIONS

---

**AWS Certified Developer - Associate**                                                        Feb 1, 2024
*Amazon Web Services*

**Certified Kubernetes Application Developer (CKAD)**                                           Jan 7, 2023
*The Linux Foundation*

**Machine Learning Specialization**                                                           Sep 11, 2022
*DeepLearning.AI, Stanford University*

**Deep Learning Specialization**                                                              Aug 24, 2022
*DeepLearning.AI*

## PERSONAL PROJECTS (LOCATED ON GITHUB)

**Voxel Grid and Octree Ray Tracer, Parallelized Voxelizer, and Voxel Particle Simulator**
*Skills: Modern C++, Parallelized Computation, GPGPU Compute, OpenGL & GLSL*
- Implemented ray tracing algorithms to quickly and efficiently render voxel (uniformly aligned 3D blocks) grids and octrees consisting of diffuse color, transparency, and normal data efficiently and in real-time using an OpenGL compute shader
- Implemented a voxelization algorithm to convert traditional 3D models made up of triangles into a sparse octree directly on the GPU in a geometry shader
- Designed and implemented a 3D particle simulation where parallelized physics calculations take place in real-time using an OpenGL compute shader

**Neural Network-Driven Cars Evolved by Genetic Algorithms**
*Skills: Genetic Algorithms, Neural Networks, Javascript, Python*
- An ensemble of genetic algorithms crossbreed and mutate the best performing neural networks to navigate a car through a race car track in as little time as possible
- The neural network takes 13 inputs: 7 forward-facing distance sensors, and 6 about the car, such as the velocity and steering angle. Its output controls the car's accelerator, steering, and standard and emergency brakes
- The project comprises Python and Javascript and runs natively in modern web browsers

**Event Ticketing App with Contactless Check-In**
*Skills: Go, Kotlin, Android, React Native, PostgreSQL Database, Near Field Communication*
- Event hosts authenticate guests' tickets using Near Field Communication (NFC) on Android devices
- Web server is written in Go with the Fiber framework
- PostgreSQL database contains users, businesses, events, and tickets
- Android app developed in Kotlin with React Native

## UNIVERSITY PROJECTS

**RISC Assembly Interpreter in C++**
*Skills: Embedded Systems Programming, Assembly, C++*
- Interpret SIC/XE assembly source code from a plain text file
- General purpose, program flow, and floating point registers
- All register, bitwise, integer, and floating point manipulation instructions
- Comparison and conditional jump instructions
- Interrupt handling and device interfacing for keyboard input

## TECHNICAL SKILLS

**Programming Languages:** C, Modern C++, Java, Go, Python, Node.js, SQL, GLSL
**Frameworks:** Spring Boot, Fiber, Express, React
**Database Systems:** MongoDB, MySQL, Oracle Database, PostgreSQL
**Testing Frameworks and Tools:** JUnit, Mockito, JMeter, ChaosMonkey
**Machine Learning Instruments:** PyTorch, Tensorflow, Scikit-Learn, Stable-Baselines, OpenAI Gym
**Graphics APIs:** OpenGL (rasterization pipeline, compute shaders)
**Computer Vision:** OpenCV
**Embedded Systems:** ARM Cortex-M7
**Misc.:** Git (version control), Jenkins (CI/CD), IBM MQ (message queue), Apache Kafka (data streaming)