AIDAN HA

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EDUCATION

University of Waterloo · 2017 - 2022
Candidate for BASc, Computer Engineering

SKILLS

- Languages: Java, C and C++ (4 years), Python (1 year)
- DevOps: Docker, Kubernetes, Jenkins, Bash, Linux/UNIX, Groovy
- Tools/Frameworks: Git, Android Studios, MongoDB, AWS, TestNG, JUnit
- Web Development: HTML, CSS, Javascript, Node.JS, Express.JS
- Experience developing runtime level programs on IBM PowerPC, x86 and Z architectures
- Enthusiastic and willing to learn new technologies!

EXPERIENCE

IBM | OMR JIT COMPILER DEVELOPER   Sept. 2019 - Dec. 2019
- Developed runtime level features and optimizations for IBM's OMR, a runtime toolkit implemented throughout various IBM products.
- Implemented ELF data relocation from LLVM IR and Clang frontend as part of OMR's initiatives towards native Java compilation.
- Added processor detection throughout multiple architectures to enable feature specific improvements on x86, Z, and PowerPC machines.
- Improved runtime tree evaluation and code generation through application of compiler theory in implementing assembly level optimizations.

IBM | OPENJ9 VM SOFTWARE DEVELOPER   Jan. 2019 - Apr. 2019
- Prototyped new features that assist with memory allocation optimization for OpenJ9. IBM's open-sourced Java Virtual Machine.
- Enabled array compatibility for Java13 new ValueTypes objects, which contributed to a 66% smaller footprint after startup.
- Implemented new VM options that enables more flexibility within multiple internal functions and tools inside the JVM, including new options for Java dump agents, command line arguments, and macros.
- Developed unit tests using the TestNG framework for the added features, which were then integrated with Jenkins CI builds.

FIDELITY INVESTMENTS | AUTOMATION/DEVOPS SPECIALIST   May 2018 - Aug. 2018
- Created a Python script to remotely host a Docker-containerized Selenium Server, which improved resource allocation on CI machines and ultimately led to a 63% decrease in scripts' runtime.
- Developed additional automated Java test scripts, which were integrated into the main Jenkins production pipeline, and scheduled to be built with a respective business timeline.
- Developed Bash and Groovy scripts to enable Git compatibility on remote Jenkins machines, implementing token authentication to securely build integration tests upon code changes.

PROJECTS

ROASTMYRESUME.CA | SOCIAL WEBSITE
- Developed a full stack website that allows users to register an account, upload their resume, and post comments on other resumes.
- Implemented a RESTful API with back-end functionalities using Node.js/Express.js to handle HTTP requests.
- Utilized MongoDB/AWS to store data in a NoSQL database and Passport.js alongside JSON web tokens to salt and secure private data.
- Currently leveraging Kubernetes for container orchestration as part of larger code refactoring towards a microservices based architecture

PAYLOAD GROUND CONTROL APP | CAN-RGX
- Developed an Android app that controlled actuators for a microgravity ferrofluid experiment tested under the Canadian Reduced Gravity Experiment Design Challenge (CAN-RGX).
- Implemented a multithreaded infrastructure to asynchronously pull experimental data and monitor experiment status over UART.

ACTIVITIES

WATERLOO ROCKETRY | ELECTRICAL TEAM SENIOR
- Developed ground support electronics and avionics hardware for a sound, 17 feet rocket that is designed to reach 30,000 feet.
- Designed boards that facilitates low latency data transfer between electrical systems for interfacing with the rocket CAN bus.
- Currently refactoring ground control equipment and designing new relay boards that remotely actuate necessary valves to launch the rocket.