

Robert Craig

r5craig@uwaterloo.ca
robrcraig.me
github.com/robinator8
linkedin.com/in/rob-craig

ACADEMICS

Software Engineering,
University of Waterloo
4.0 GPA, 96% avg
2019 – 2024

GOALS

- Solve hard problems
- Deeply understand every layer of the tech stack

SKILLS

General

Distributed systems / data structures / algorithms / operating systems / compilers / optimization / data engineering / IoT / databases / web dev / build systems / tracing

Languages

Java / Python / Kotlin / C++ / SQL / GraphQL / JavaScript / TypeScript

Technologies/Libraries

Git / Kubernetes / Docker / Android / React / NiFi / Micronaut / Spring

HOBBIES

Arts

Piano Improvisation / embroidery / drawing / painting / photography

Sports

Rock climbing / Skiing

RELEVANT WORK EXPERIENCE

Citadel

Software Engineer Intern (Enterprise Data Team)

June – Aug. 2022

Java / Data Pipelines / NiFi / K8s

- Developed and presented **Micronaut metrics** library using **HTTP** response interception; provides **10x** metrics code reduction and **DataDog** monitoring for **3** production services
- Planned and executed **migration** and **deployment** of a single-point-of-failure service for all data ingestion; spearheaded a new build and deployment pipeline by linking previous unconnected **CI** and **CD** tools
- Lead design and implementation of a complex parallelized **ingestion pipeline** in **NiFi** for **Reuters** equities and futures data across several regions

Splunk

Software Engineer Intern (IoT Full-Stack)

Sept. – Dec. 2021

Python / Kotlin / Android / TS / GraphQL

- Developed features for an **IoT monitoring device** over **embedded, backend, and android**
- Developed, presented, and deployed production Android screens on **customer facing** app
- Owned **IoT** device performance; used **Python profiling** to find and fix bottlenecks, achieving a **3x** increase in FPS performance and a **10x** reduction in screen navigation time
- Lead design and implementation of **IoT device anomaly detection** configuration architecture, achieving automatic remote configuration synchronization using **MQTT**

Uber

Software Engineer Intern (Authentication Team)

Jan. – April 2021

Kotlin / Android / Web Auth

- Designed, implemented, and presented an improvement to **Uber Eats** social login on **Android** using **Kotlin**, achieving a **2.5%** lift in onboarding success
- Identified and reported a signup and login **UX** issue affecting **100,000 users/day**

Global Relay

Co-op Software Developer (Backend)

May – Aug. 2020

Java / Spring / K8s / Docker / Microservices

- Designed, implemented, and presented a multi-microservice error handling strategy, which used **distributed tracing** to easily diagnose user issues
- Reduced vulnerabilities and code smells by over **90%** across five microservices using **SonarQube's** static code analysis tool

Phoenix Data Consulting

Cofounder and Software Engineer

April – Aug. 2020

JavaScript / Data Science / deck.gl

- Created GPU-based web **visualization** using a custom **spatial interpolation** algorithm to help Indigenous communities understand temperature and salinity data in the Hudson's Bay

PROJECTS

Toy Embedded Operating System / 2022

OS / C / Assembly

- Implemented kernel with priority-based process scheduler, requestable memory pool, synchronous and timed message passing, and an **interrupt-based** shell in a group of four

C-Subset Compiler / 2021

Compilers / Programming Languages / C++

- Implemented C-subset compiler including a scanner, AST parser, type checker, code optimizer, assembly generator, assembler, linker, and loader

teagreen.ca / 2020

UI Design / React / CSS / JavaScript / MobX

- Developed a music improvisation blog with a custom audio player and queue