

SKILLS

Languages: C/C++, Rust, Go, Java, x86-64, ARM, JavaScript, TypeScript, Python, PHP, Bash, SQL

Technologies: MongoDB, gRPC, React, Node.js, Express, Vue.js, Bootstrap, Material UI, Vuetify

Tools: Linux, Git, Docker, Kubernetes, Jenkins, Terraform, Bazel, Azure, AWS, Datadog, Kibana, Ghidra

EXPERIENCE

Backend Engineer Intern - TextNow, *Waterloo, ON*

January 2020 - April 2020

- Developed a phone number reconciler service using Go that keeps the internal inventory up-to-date, which discovered over 2.1 million unused numbers and saved \$500,000
- Deployed the reconciler using Kubernetes, provisioned AWS with Terraform, and analyzed metrics in Datadog
- Authored a Go service to determine cost markup for phone calls with 200% improvement in efficiency
- Integrated an event handling service to aggregate customer info on all occurrences of logins and registrations

Full Stack Developer - Emailtopia, *Mississauga, ON*

January 2019 - August 2019

- Constructed a subscription-based billing service in Go, saving over 50 hours/week of accounting work
- Automated building, testing, and scaling of microservices using Kubernetes and CI/CD Jenkins pipelines
- Implemented a custom JWT-based web authentication system to secure each backend API
- Architected and developed backends for onboarding and administration services in Go with Gorilla Mux
- Developed a library to use Azure Key Vault for securing secrets in the source code and deployed it in each AKS cluster using Azure AD Pod Identity configurations

Software Developer - Segmentech, *Markham, ON*

June 2018 - August 2018

- Used Python, Bash, and Perl to automate manual tasks and increase the efficiency of internal workflow
- Created scripts for clients to automate data aggregation and analysis from a SQL database

PROJECTS

NES Emulator (Rust)

github.com/ZacJoffe/znes

- Built a cross-platform, cycle-accurate emulator of the *Nintendo Entertainment System* using Rust and SDL2
- Accurately simulated the CPU, graphics, audio processors, and vendor-specific game cartridge hardware
- Extended support to over 1000 games published for both the NES and Japanese *Famicom*, such as *Super Mario Bros.*, *The Legend of Zelda*, and *Metroid*

Tetris Clone (C++)

github.com/ZacJoffe/sdl-tetris

- Created an authentic clone of *Tetris*, fully-featured with scoring, leveling, and dynamic block queueing
- Built on top of a cross-platform game engine implemented from scratch using C++ and SDL2

Text Editor (C)

github.com/ZacJoffe/text-editor

- Implemented a lightweight vim-like terminal-based text editor with syntax highlighting for C/C++
- Designed for efficient text editing with a focus on simplistic and intuitive keybindings

EDUCATION

Candidate for Bachelor of Software Engineering, *University of Waterloo, Waterloo, ON, 2018 - Present*