Eric Mikulin

Software Developer

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Programming Skills

- **Languages :**
  - **Fluent**: C, C++, Rust, Python, Javascript, Typescript
  - **Proficient**: Bash, Go, Ruby, Assembly, Verilog, Wiring, Java
  - **Familiar**: Scala, iOS (Swift), Android (Java)
- **Technologies :**
  - **Operating Systems**: Linux, MacOS, Windows, iOS, Android
  - **Frameworks & Libraries**: Django, Flask, Rails (Ruby), React, NodeJs, ReactiveX
  - **Tools**: Protobuf, Yocto, Jenkins, Terraform, CMake, TeamCity
  - **Database**: Postgresql, MySQl, MongoDB, Redis
  - **Cloud**: AWS, Docker, Kubernetes, Google Cloud Vision API, Azure Cognitive Systems, Gitlab CI, Github Actions

Experience

- **Visualping.io** — Vancouver, BC
  Junior Software Developer — *January 2021 – Present*
  - Full stack web development using React, NodeJS and Typescript.

- **UBC Unmanned Aircraft Systems** — Vancouver, BC
  Software Team Lead — *September 2018 – June 2021*
  - Designed and implemented Python mission planning and obstacle avoidance algorithms. This involved NP-Complete problems where optimizations were needed in order to achieve a reasonable runtime.
  - Designed multi-language mini-service based software system architecture in order to increase redundancy and throughput where radio and network communication was not reliable.
  - Designed and implemented image correction and transformation algorithms. This led to the team winning an award for most accurate data where these algorithms where used.
  - Responsible for interviewing, managing and teaching members, as well as managing projects and team meetings.

- **Tableau Software** — Vancouver, BC
  Software Engineer Intern — *September 2020 – December 2020*
  - Developed a TeamCity ORM library for use in multiple other projects.
  - Created several AWS Lambda endpoints using Python and the Serverless framework. These endpoints interacted with TeamCity, Microsoft Teams and Perforce instances in order to automate manual operations processes. One such endpoint greatly reduced operations overhead by turning a manual 10+ step changelist backout process into a single automated API call.

- **Hootsuite Inc.** — Vancouver, BC
  Plan & Create Software Co-op — *January 2020 – August 2020*
  - Added logging, statsd based reporting and Sumologic dashboard for React and Scala based video transcoding service in order to verify that the acceptance and performance criteria were being met.
  - Extended LinkedIn image posting functionality in React and Scala services to allow posting of multiple images, resulting in a 2% increase in total LinkedIn posts through the Hootsuite service.
  - Fixed software bugs, added UI elements and added both Scala backend and React frontend features throughout the Hootsuite product.

- **Zaber Technologies Inc.** — Vancouver, BC
  Software Co-op — *May 2019 – December 2019*
  - Added C++ language capability to the Zaber Motion Library using EJS templates and Protobuf. This includes the setup of the CI build, packaging and deployment systems for the finished library on multiple OSes and architectures.
  - Implemented core Go library functionality for the Zaber Motion Library. This included ASCII and binary communication protocol features required to release the library.

- ○ Optimized the delta-encoding algorithm used for cross CPU SPI transfers, resulting in a 12x increase in encoding performance. This was a critical part in getting Zaber's new controller to meet it's bandwidth requirements.
- ○ Wrote multiple C++ firmware features for a new controller, including I/O drivers and factory reset functions.

- **Ryffine Inc.**   Denver, CO
  Software Programmer (Contractor)   *January 2019 – July 2019*

- **D-Wave Systems Inc.**   Burnaby, BC
  Systems Software Co-op   *May 2018 – December 2018*
  - ○ Wrote API endpoints for D-Wave's Leap cloud service back-end to enable critical front-end user interface functionality such as maintenance notifications and solver access.
  - ○ Created front-end views for notifications, QPU solver availability and user profiles using the React JS framework.
  - ○ Wrote and maintained back-end integration between the Leap web application and the Business team's Zendesk and Salesforce systems so that the Business team could access new leads and generate important reports.
  - ○ Created an automated docs website publishing pipeline using Terraform and Jenkins that enabled the technical writers to publish docs without involving developers. This saved both developer and writer time by completely automating what was a long manual build process.

- **Novax Industries Corp.**   Delta, BC
  Software Programmer (Contractor)   *October 2017 – March 2018*
  - ○ Wrote C userspace Linux drivers for an ARM based custom embedded system to enable use of the i2c gpio and sd card reader devices.
  - ○ Updated the C based XML configuration library to speed up and make the configuration system more robust, as well as align with additional new specs.

- **Minesense Technologies Ltd.**   Vancouver, BC
  Software Intern   *Summers of 2015, 2016 and 2017*
  - *2017* ○ General C/C++ application development and maintenance for multiple x86 based Linux embedded PCs.
  - ○ Rewrote existing C++ code for transferring large amounts of spectrum data between embedded PCs into object oriented C++ classes. The new classes improved system performance and reduced the time to integrate new features.
  - ○ Wrote a kernel module to expose embedded application settings in the Linux /proc filesystem, reducing embedded system configuration time and complexity and therefore speeding up application development and testing as well as allowing run-time configuration changes to facilitate testing on a read-only disk.
  - ○ Wrote an automated update utility that allowed for automated updates across multiple write-protected disk partitions which reduced the update time from 20+ minutes to a few minutes and eliminated human error.
  - *2016* ○ Manually patched and compiled the Linux kernel with real-time and other custom patches in order to improve the I/O throughput of the system, allowing it to achieve critical system performance requirements.
  - ○ Modified the Linux kernel init script and initramfs to boot with overlayfs (Union filesystem) to make the system read-only from disk. This improved the embedded PC robustness and reliability during frequent but unexpected power cuts.

Qualifications

- **Canadian Pilot Certificate**: Small Remotely Piloted Aircraft System - Advanced Operations; Achieved 2019
- **Canadian Amateur Radio License**: Basic w/ Honors; Achieved 2017

Awards

- **Winner, Best use of AWS, Best Domain, Best Crypto, et al.**: NW Hacks, University of British Columbia; Achieved 2020, 2019, 2018, 2017
- **1st place**: Feeding 9 Billion Case Competition, University of British Columbia; Achieved 2018
- **2nd place**: Calgary Collegiate Coding Competition, University of Calgary; Achieved 2016

Clubs & Design Teams

- **UBC Unmanned Aircraft Team**: Software Systems Team Lead; 2018 – Present
- **UBC Code the Change**: Full-Stack Developer on Chingari project; 2017 – 2018
- **UBC Baja Team**: Suspension Sub-team, microcontroller sensor project; 2016 – 2017
- **FRC Team 4719 - Technetronic Bulldogs**: Mechanical and Software Teams; 2013 – 2016

As a dual Unites States of America and Canadian citizen, I am available to work in either nation.