

# Justin Michaud

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## SKILLS

**Know:** Java, Scala, Rust, C++, Android, MySQL, Kafka

**Have used:** OpenGL, Python, Ruby, Galera, Arduino, Javascript/ES6, EmberJS, ElasticSearch, Elixir

## EXPERIENCE

### PAGERDUTY, SOFTWARE ENGINEERING INTERN

Jan 2018 – April 2018 | San Francisco, CA

- Developed pipeline to transactionally publish records to Kafka from our monolith, using open source tool Maxwell to publish Mysql binlog updates to Kafka
- Built service using Scala/Akka Streams to enable filtering and publishing of Maxwell messages to multiple Kafka clusters; Submitted PRs to Maxwell to enable safe recovery for various failure cases
- Added OAuth support to backend for frontend service written with Scala and Akka Http

May 2017 – Aug 2017 | Toronto, ON

- Optimized Mysql queries, added indexes and denormalized columns allowing dashboard to support accounts with millions of incidents
- Polished incident priority feature using ruby, EmberJS and iOS/Android SDKs

### YMCA, I.T. ASSISTANT

Jun 2014 – Aug 2016 | Sudbury, ON

- Built low-bandwidth remote support tool that used UDP hole-punching to tunnel TCP connections without port forwarding

## SELECTED PROJECTS

More at [justinmichaud.com](http://justinmichaud.com)

### ANYSOFTKEYBOARD

Java, C++ | Contributor

- Contributed gesture typing feature to create first open source swipe keyboard for Android
- Compares input paths to simulated paths to find most likely word

### RUST NES EMULATOR

Rust, 6502 ASM

- Created NES emulator capable of playing Super Mario Bros, Donkey Kong
- Included game modifications for Super Mario Bros. not possible on original hardware

### GLIDEN64

C++, OpenGL | Contributor

- Contributed stereoscopic rendering support to GlideN64 Nintendo 64 emulator
- After projection matrix is applied, "untransforms" vertices to apply eye translation, avoiding toe-in artifacts

### VR SPACE SHOOTER

Java, OpenGL

- Cardboard shooter game using head tracking to allow player to shoot enemies and dodge obstacles
- Used OpenGL for rendering, BoofCV on a laptop to track the position of player's head

### ION GUI FRAMEWORK DEMO

Rust

- Fork of servo browser engine supporting a simple react-like rust html macro and native rust event handlers;
- Like electron, but using native rust + servo instead of javascript + webkit.

### OTHER

Scala, Rust, C??

- Torn-RNN Super Mario Bros Level Generation (Blog)
- What is a monad? (Talk + Scala Worksheets)
- Pagerduty Doom Mod - deadliest incident response??

## EDUCATION

### UNIVERSITY OF WATERLOO, 2A COMPUTER SCIENCE

Sept 2016 - Present | Waterloo, ON

## INTERESTS

Oboe with Orchestra@UWaterloo and UW concert band club, playing games on my Commodore 64