

# Justin Michaud

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## SKILLS

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

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

## EXPERIENCE

**PAGERDUTY, SOFTWARE ENGINEERING INTERN** Kafka, Scala, Akka | Jan 2018 – April 2018 | San Francisco, CA

- Developed service to transactionally publish records to Kafka from Mysql; Enabled teams to easily move services outside monolith without compromising consistency
- Submitted bugfixes and recovery feature to open-source Maxwell Mysql binlog update publisher
- Built service using Scala/Akka Streams to enable filtering, publishing of Maxwell messages to multiple Kafka clusters
- Added OAuth support to backend for frontend service written with Scala and Akka Http, used by new services to avoid dependency on monolith

Ruby, Mysql, EmberJS | May 2017 – Aug 2017 | Toronto, ON

- Optimized Mysql queries, added indexes and denormalized columns allowing incidents dashboard to support 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 using UDP hole-punching to tunnel TCP connections without port forwarding

## SELECTED PROJECTS

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

**ANYSOFTKEYBOARD (OPEN SOURCE CONTRIBUTOR)**

Java, C++, Android

- 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 not possible on original hardware, import/export support for Super Mario Bros. levels

**GLIDEN64 (OPEN SOURCE CONTRIBUTOR)**

C++, OpenGL

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

**DIY HEAD TRACKING CARDBOARD VR SPACE SHOOTER**

Java, OpenGL, BoofCV

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

**RUST/SERVO 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

- What is a monad? (Tech Talk + Scala Worksheets)
- Torn-RNN Super Mario Bros Level Generation (Blog post)
- Pagerduty Doom Mod - Deadliest Incident Management Solution (view and resolve incidents as enemies in-game)

## 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, collecting old Macs