Matthew J. Barichello

Systems Integrator
Software Engineer
Electrical Designer

(226) 787-3330
matthewjbarichello@gmail.com
https://nogenerics.info
https://github.com/Matthewacon
https://www.linkedin.com/in/matthew-barichello

Experience

March 2020 - February 2021

Sensibill Inc. (Security Champion), *Toronto, Ontario*

- Introduced proactive security standards for engineering teams
- Deployed new CI-coupled security infrastructure for source and dependency vulnerability detection and quality gating
- Deployed new active infrastructure monitoring utilities for behavioural anomaly detection, resource load monitoring and real-time attack detection

Sensibill Inc. (Data & AI Researcher), *Toronto, Ontario*

- Built out bleeding edge heuristic data extraction models in Typescript and Python that powered the development and release of multiple new Extraction-as-a-Service (EXaaS) products
- Created real-time data segmentation prototypes based on graph clustering to select the appropriate model(s) for optimal data extraction
- Created and maintained data annotation tooling
- Handled production model deployments

December 2019 - March 2020

Sensibill Inc. (Backend Engineer), *Toronto, Ontario*

- Developed a set of scalable RESTful microservices in Golang and Java, backed by a scalable asynchronous message query platform
- Created and provisioned cloud architecture using IaC on AWS
- Managed a private CI and CD platform using IaC on AWS

May 2019 - March 2020

Optimotive Technologies (Contractor), *Windsor, Ontario*

- Contractor for electrical design and software development

March 2019 - March 2020

No Generics Ltd. (CEO), *Belle River, Ontario*

- Scalable cloud virtualization with a 10Gbe intranet back-plane for high-throughput storage access
- Game server hosting with segregated virtualization containers and isolated networking
- Software development and electrical design contractor

February 2018 - June 2019

Programming and Computer Science Tutoring, *Assumption College High School*

- Private online Java programming tutoring during weekdays after school
- In-class Java programming and computer science conceptual tutoring

September 2015 - June 2017

Programming and Electrical Design Mentor, *Assumption Robotics Club*

- Taught and mentored Java and C programming as well as circuit design and implementation in robotics

2013 - March 2015

Multi-tiered Networking and Server Deployment, *Blind Beast Servers, Home Lab*

- Deployed fault tolerant continuous integration service, git repository and DNS caching service, across multiple hosts in the cloud
- Deployed a lights-out, fully-encrypted PXE boot based KVM cluster over 10Gbe, with redundant 1Gbe seamless fallback routes and isolated management NICs, utilizing mixed consumer-grade and industrial computing solutions

Languages & Frameworks

Cloud Platforms	`AWS; DigitalOcean; OVH; Azure`
Cloud Frameworks	`PrismaCloud; SonarQube; Instana`
CI/CD & Automation	`Kubernetes; GitLab; GitHub Actions; CircleCI; Jenkins; sr.ht`
IaC	`HCL Terraform; Chef; AWS CDK`
Languages	`C++; C; Java; Kotlin; Groovy; TypeScript; JavaScript; Go; Bash; m4; LaTeX; Python; Lua; Pascal`
Operating Systems	`Windows; macOS; Linux (Debian & derivatives; Red Hat & derivatives; Arch)`
Frameworks	`OpenCL; OpenGL; Apache Commons; Processing; JNI; Coreutils; KVM; QEMU; LUKS; Systemd; Init; Cron; iproute2; iptables; docker`
Build Tools	`Gradle; Maven; Ant; CMake; GNU/Make; Autotools; Waf`

Education

August 2019 — **Quantum Cryptography School for Young Students** *University of Waterloo*

September 2015 - July 2019 — **Ontario Secondary School Diploma** *Assumption College High School*

International Baccalaureate Certificate *Assumption College High School*

July 2015 — **DMA Certificate for Advanced Java Programming** *University of Toronto*

Projects

September 2019 - present — **baron** - C, C++, CMake, JNI, JVMTI
- A reverse engineering framework built on top of fake-jni designed to streamline the disassembly process by interacting with black-box JNI modules and JVMTI agents.

August 2019 - present — **cx-mat** - C++, CMake, OpenCL, OpenGL
- A portable constexpr-compatible linear algebra library built with both vertical and horizontal scalability in mind. cx-mat exposes a high-level template interface allowing for stream-like operation composition, which decomposes to any number of backends, supported by both OpenGL and OpenCL.

April 2019 - August 2019 — **jda** - Kotlin, Groovy, Gradle
- A simple adapter library that exposes an interface for JetBrains' proprietary implementation of the Fernflower Java decompiler.

February 2019 - present — **CX** - C++, CMake
- A collection of platform-agnostic constant expression tools, template meta-functions and detection idioms. Provides support for compile-time string manipulation, compile-time reflection, compile-time variadic tuple construction and manipulation, and much more.

January 2019 - present — **fake-jni** - C++, CMake, JNI, JVMTI
- A portable C++ library for seamlessly implementing Java classes completely in native code. Designed specifically for removing the overhead of a running JVM instance from a JNI native library, with minimal API boilerplate and dynamic linking support

July 2018 - present — **Pal** - Java, C++, Groovy, Gradle, CMake
- A Java compiler extension that enables meta-programming and bytecode instrumentation through annotations, while retaining full compatibility with preexisting and future JVM and JDK specifications.

Competitions

March 22-23, 2019	**Massey Hacks V**
December 7, 2018	**15th Windsor Regional Secondary School Programming Competition**
September 14-16, 2018	**Hack the North 2018**
April 28-29, 2018	**Massey Hacks IV**
April 1-2, 2017	**Massey Hacks III**
May 21-22, 2016	**Massey Hacks II**

Awards

2018	**First Place Programming Team Award**, *University of Windsor*
2018	**First Place Hacker**, *Massey Hacks IV*
2018	**Best Hardware Hack**, *Massey Hacks IV*
2016 - 2019	**Honour Roll**, *Assumption College High School*
2015	**Optimist Award**, *St. William Elementary School*
2015	**Science Proficiency Award**, *St. William Elementary School*
2015	**Academic Excellence Award**, *St. William Elementary School*