Matthew J. Barichello

Systems Integrator
Software Developer
Electrical Engineer

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Experience

December 2018 - present
No Generics Ltd. (CEO), *Belle River, Ontario*
- Scalable cloud virtualization with a 10Gbe intranet back-plane for instantaneous storage access
- Game server hosting with segregated virtualization containers and isolated networking
- Software development and electrical engineering contractor

February 2018 - present
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 Engineering Mentor, *Assumption Robotics Club*
- Taught and mentored Java and C programming and circuit design and implementation in robotics

2013 - March 2019
Multi-tiered Networking and Server Deployment, *Blind Beast Servers, Home Lab*
- Deployed fault tolerant continuous integration, git repository and DNS caching servers 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

Projects

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

Jan 2019 - present
18650 Hybrid Power-wall and UPS - C++, CMake, C, Embedded Electronics
- Currently assembling a hybrid power-wall system from salvaged 18650 Li-Ion cells, to supply the company virtualization lab during peak grid usage hours, and to charge during off cycles in order to save on power costs. The power-wall furthermore provides uninterruptible power supply functionality, in the event that the grid supply becomes unreliable, during charging cycles

July 2018 - present
Logic Analyzer Repair and Restoration - ESP8266, C++, CMake, Bash
- Currently restoring a Philips 3585 Logic Analyzer requiring main-board component level repairs, power supply repairs, EEPROM re-flashing and custom hand-built logic probes

July 2018 - present
Pal - Java, C++, Groovy, Gradle, CMake
- Created a Java compiler extension that enables meta-programming through annotations, while retaining full compatibility with preexisting and future JVM and JDK specifications

Languages & Frameworks

Languages	`Java; C; C++; Groovy; Bash; m4; LaTeX; Python; Lua; Pascal`
Operating Systems	`Windows; macOS; Linux (Debian & derivatives; Red Hat & derivatives; Arch)`
Frameworks	`Processing; OpenCL; OpenGL; Apache Commons; Coreutils; KVM; LUKS; Systemd; IP; Iptables; Init; Cron`
Build Tools	`Gradle; Maven; Ant; CMake; Make; Autotools; Waf`

Education

September 2015 - present	**Ontario Secondary School Diploma** *Assumption College High School (ongoing)*
	International Baccalaureate Certificate *Assumption College High School (ongoing)*
July 2015	**DMA Certificate for Advanced Java Programming** *University of Toronto*

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 - 2018	**Honour Roll**, *Assumption College High School*
2015	**Science Proficiency Award**, *St. William Elementary School*
2015	**Academic Excellence Award**, *St. William Elementary School*