

# Matthew J. Barichello

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SYSTEMS INTEGRATOR  
SOFTWARE DEVELOPER  
ELECTRICAL ENGINEER

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## Experience

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| May<br>2019       | - present       | <b>Optimotive Technologies (Contractor)</b> , <i>Windsor, Ontario</i> <ul style="list-style-type: none"><li>Contractor for electrical engineering and software development.</li></ul>  |
| December<br>2018  | - present       | <b>No Generics Ltd. (CEO)</b> , <i>Belle River, Ontario</i> <ul style="list-style-type: none"><li>Scalable cloud virtualization with a 10Gbe intranet back-plane for instantaneous storage access</li><li>Game server hosting with segregated virtualization containers and isolated networking</li><li>Software development and electrical engineering contractor</li></ul>   |
| February<br>2018  | - present       | <b>Programming and Computer Science Tutoring</b> , <i>Assumption College High School</i> <ul style="list-style-type: none"><li>Private online Java programming tutoring during weekdays after school</li><li>In-class Java programming and computer science conceptual tutoring</li></ul>  |
| September<br>2015 | - June<br>2017  | <b>Programming and Electrical Engineering Mentor</b> , <i>Assumption Robotics Club</i> <ul style="list-style-type: none"><li>Taught and mentored Java and C programming and circuit design and implementation in robotics</li></ul>  |
| 2013              | - March<br>2019 | <b>Multi-tiered Networking and Server Deployment</b> , <i>Blind Beast Servers, Home Lab</i> <ul style="list-style-type: none"><li>Deployed fault tolerant continuous integration, git repository and DNS caching servers across multiple hosts in the cloud</li><li>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</li></ul> |

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## Projects

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| Jan<br>2019  | - present | <b>fake-jni</b> - C++, CMake, JNI, JVMTI <ul style="list-style-type: none"><li>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 JNI native library, with minimal API boilerplate and dynamic linking support</li></ul>   |
| Jan<br>2019  | - present | <b>18650 Hybrid Power-wall and UPS</b> - C++, CMake, C, Embedded Electronics <ul style="list-style-type: none"><li>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.</li></ul> |
| July<br>2018 | - present | <b>Logic Analyzer Repair and Restoration</b> - ESP8266, C++, CMake, Bash <ul style="list-style-type: none"><li>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</li></ul>   |
| July<br>2018 | - present | <b>Pal</b> - Java, C++, Groovy, Gradle, CMake <ul style="list-style-type: none"><li>Created a Java compiler extension that enables meta-programming through annotations, while retaining full compatibility with preexisting and future JVM and JDK specifications</li></ul>   |

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## Languages & Frameworks

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Languages	Java; Kotlin; Groovy; C; C++; Bash; m4; <del>TeX</del> ; 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
Build Tools	Gradle; Maven; Ant; CMake; GNU/Make; Autotools; Waf

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## Education

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

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## Competitions

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

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## Awards

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