**Ian Maquignaz**
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Expected Graduation Date: September 2016

Career Objective: *To secure a position and a career with a global innovator where I can use my knowledge to the best of my abilities, and innovate the digital world.*

Interests: *Intelligent Systems, High Performance Computing, Data Mining, Malware Analysis and Network Security.*

EDUCATION:

***Masters of Engineering*** *Queen's University* *Sept. 2014 – August 2016*

Pursuing a Masters of Engineering in Computer Engineering at Queen's University. Areas of study include Software (Re)Engineering, Cluster Computing, Computer Security and Data Mining.

***Undergraduate*** *Queen's University* *Sept. 2010 – April 2014*

Studied Computer Engineering at Queen's University in Kingston, Ontario

***High School*** *Seoul, South Korea* *Sept. 2006 – June 2010*

Graduated in June 2010 with an International Baccalaureate

WORK AND VOLUNTEER EXPERIENCE:

**Service Engineer** Redmond, Washington May – August 2015

Microsoft Corporation

- Independently developed a service outage detection tool for Microsoft's Safety Platform Services. Solution was compartmentalized into the following pieces:
  - A data analytics piece for outage detection. This artificially intelligent solution included customizable rulesets and an intricate capacity for eliminating false positives. Testing on sample outage data demonstrated no false positives were produced and that outage temporal boundaries matched visually estimated boundaries.
  - An outage reporting tool through visual studios online (VSO). This program concatenated identified service failures into outage tickets, ensuring that no outage be reported twice or overlap.
  - A data visualization suite for present service status and all historical data. A clean representation scheme was accomplished through HTML and JavaScript imbedded in a Microsoft internal tool. This required very strict structure in the produced data.
- A successful design was implemented, with all aspects created, but time fell short for activation in the cluster. This project greatly demonstrated excellence in project management, including multiple design cycles, prototypes, and assurance of quality in scalability. Extensive documentation was written detailing developmental progression, and the functionality of this project.

**Parts & Services** Montreal, QC June – August 2014

General Motors Canada

- Completed packing of dealer shipments. Strived to ensure order accuracy and optimal speed.
- Proposed alterations to warehouse organization, product packaging and equipment placement to improve efficiency. Basis for alterations was data mining and artificial intelligence, which identified that significant advantages in warehouse throughput could be achieved by recognizing the relationship parts have to vehicle families, and in turn recognizing if a dealer was replenishing bulk stock or ordering repair specific parts. These suggestions were made to supervisors and in turn with their approval in a formal proposal to the facility director.
- The proposed solution would have minimized the order prep-time by suggesting altering packaging for small bulk items, suggesting varied package quantifies for frequently purchased items, offering multiple item placement locations, a continually optimization warehouse (dynamic vs current static), and algorithmically minimizing the travel distance by introducing variable routes (instead of applied singular static route).

**Software Test Engineer** *Oshawa – CREC* *May – August 2013*
General Motors Canada

- Worked with a team developing a bi-fuel FICM (Fuel Injector Control Module) capable of running both on gasoline and propane. Sold under Opel starting in 2016.
- Maintained a testing suite for the team's Integrated Model through MatLab's Simulink environment. Debugged existing Simulink models from each team member to combine and create an integrated model. Test cases were created and applied to assert functionality and correctness.
- Performed hardware validation of the IBS (Intelligent Battery Sensor), which appeared on most 2015 and later models. Built testing bench and programmed scripts through Vehicle Spy to interface and communicate through both the vehicle's SAE J1962 OBD-II connector to the ECU and through the vehicle's embedded LIN communication network.

**IT Consultant -** [Bénévole]. *Ottawa – House of Commons* *June – August 2012*
New Democratic Party

- Responsible for coordinating maintenance and updates to the NDP's Radius database, used by party members nationwide to coordinate events and other party theatrics.
- Coordinated action between party offices and service administrators in Ottawa and Montreal, working efficiently in both English and French.
- Responsible for creating and updating extensive Excel databases for current NDP outreach projects.

**Teaching Assistant** *Kingston – Faculty of ECE* *Jan. 2012 – April 2014*
Queen's University

- Teaching assistant for APSC 142 (Introduction to Computer Programming for Engineers)
- Collaborating with other TA's, managed grades and lead course laboratories for 60+ students
- Recommended improvements and implemented strategies to foster engineering creativity and excellence among first year students. These improvements have helped grow the ECE department.

AWARDS AND NOTABLE ACHIEVEMENT:

2010 Recipient of the 2010 Computer Science Award, for outstanding achievement and strive for further understanding in the field of computer science.
2011 Nominated for the 2011 Mason Cup for outstanding performance in Engineering Design.
2012 Recognized for notable achievement in the APSC 142 (Introduction To Computer Programming For Engineers) final project. A video of my project is now shown by professors to demonstrate the capabilities of the Lego NXT Robots.
2012 Recognized for notable achievement in ELEC 299 (Autonomous Robot Design) for implementing a Python based Bluetooth Joystick control module for a standardized Arduino robot.
2013 Recognized for ingenuity and creativity in CISC 320, leading a team designing an intelligent home.
2014 2nd Place winner of the 1st annual Queen's Network Security Competition.
2014 2nd Year Choice Award for Project Big Brother design project.
2014 3rd Place winner at the IEEE Student Project Competition (Institute of Electrical and Electronics Engineers)
2014 Recognition at the annual PEO student paper competition (Professional Engineers Ontario).
2014 Suggested algorithmic improvements to the General Motors Point Claire warehouse facility. If implemented, these changes will greatly improve warehouse efficiency.

PROFICIENT PROGRAMMING LANGUAGES:

- C
- C++
- C#
- Java
- Ruby
- Python
- Assembly
- Verilog
- VHDL
- S/SL
- JavaScript
- HTML

PROFICIENT LIBRARIES AND SOFTWARE ENVIRONMENTS:

- Visual Studios
- Eclipse
- OpenCV
- Kinect SDK
- Quartus II
- Code Blocks
- Linux
- Rapid Miner
- Aldec Active-HDL
- Arduino Development Environment
- MathWorks (MATLAB and Simulink)
- Kali Linux

CLUBS AND ACTIVITIES:

**Global Issues Network (GIN)** *Seoul Foreign School* *2008 – 2010*

- Speaker at the 2009 GIN conference in Bangkok, Thailand on the subject of Modern Terrorism.
- Speaker at the 2010 GIN conference in Honk-Kong on the subject of Global Infectious Diseases.

**ECE Club** *Queen's University* 2011- 2014

Electrical & Computer Engineering Student Council

- Acting 2nd year student representative for the 2011-2012 Academic year
- Acting webmaster and website developer for the 2012-2013 Academic year
- Acting Computer Engineering student chair for Electrical and Computer Engineering Department's curriculum committee during the 2012-2013 Academic year
- Senior Academic student chair for Electrical and Computer Engineering during the 2013-2014 Academic year
- Undergraduate chair on the Electrical and Computer Engineering Curriculum Committee, Faculty Board, and Working Group for Undergraduate Relations (WGUR) during the 2013-2014 session

**Formula SAE** *Queen's University* Sept. 2013 – April 2014

- Modeling engine output and exhaust control. Acted as the team's Marketing Manager.

**NetSec** *Queen's University* Sept. 2013 – 2015

- Founding member of the Queen's Network Security Team. Current treasurer.
- 2nd Place winner of the 1st annual Queen's Network Security Competition

**Queen's Programming Group** *Queen's University* February 2014 – April 2015

- Queen's competitive coding team

**CDX 2014 & CDX 2015** Royal Military College April 2015 & April 2016

- Participated in the 15th & 16th annual Cyber Defence Exercise (CDX), a cyber-exercise hosted by the National Security Agency (NSA) and conducted over virtual private networks aiming to test cybersecurity skills, and promote ingenuity in cyber defense.
- During this event, teams from six military education establishments defend a network of their own design against the National Security Agency's top information assurance professionals.
- Participated with the CDX 2015 Royal Military College (RMC) team as a malware analyst. Through advanced static analysis, identified a previously undiscovered malware piece running on client machines by identifying a developer name in debugger files. Captured pieces were reverse engineered, including one time sensitive beacon which was of particular interest to the team and identified as a member of the Cobalt Strike family.
- Participated with the CDX 2016 Royal Military College (RMC) team as a malware and forensics analyst. Was responsible for the cleaning and the operation of Linux Grey-User workstations, including systems running Ubuntu and Centos. Identified and removed malicious scripts embedded in the systems, including a hidden piece allowing for escalation of privilege through Crontabs.

REFERENCES: Character and past employment references are available upon request.