# Thomas Arellano

Computer Engineering
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## EXPERIENCE

### BANALOGIC CORPORATION | Software Developer

May 2016 – Aug 2016 | Richmond Hill, ON

- Developed android application to test and report vehicle's diagnostic for standardized vehicle emission quality
- Used the java native interface to work with android serial port for vehicle-to-device communication
- Collaborated with hardware engineer to manufacture custom microcontroller for OBD2 port transmissions
- Implemented XML serialization using kSOAP2-android to send diagnostics to SOAP WebService following HTTPS
- Designed clean and efficient UI to allow any car owner the ability to diagnose their vehicle in less than 2 minutes
- Tested various types of vehicle standards, diagnostic trouble codes, and parameters to ensure quality reports were created
- Created UI framework for state machine based .NET application using Windows Workflow Foundation
- Exposed to LINQ, JSON, and REST APIs working on WinForm Entry forms for Vehicle Inspection Solutions

## PROJECTS

### KARNAUGH MAP SOLVER | Android Application

Jun 2016 – Present | Waterloo, ON

- Developed custom implementation of the Quine-McCluskey Algorithm to solve Boolean functions generated by K-Maps
- Used Dijkstra shunting-yard algorithm to interpret infix expressions in order to generate K-Maps from a Boolean function
- Currently working on application UI with custom K-Map views and dynamic sizing

### IMPULSE | C# Game

May 2015 – Jun 2015 | Guelph, ON

- Built a billiard-style game with realistic collision code and physics simulation using object oriented programming
- Designed functional user interface, challenging levels, and appealing graphics

### SELF DRIVING CAR | Arduino Hack

May 2015 – Jun 2015 | Guelph, ON

- Built an autonomous RC car with a custom servo-motor for more precise steering in a small team
- Programmed automatic steering using feedback from range finders to maneuver and avoid obstacles

## EDUCATION

### UNIVERSITY OF WATERLOO | Candidate for Bachelor of Applied Science, Computer Engineering

Expected May 2020 | Waterloo, ON

Relevant Courses:

- Algorithms and Data Structures: Studying different data structures and abstract data types; gaining an understanding of algorithms from searching to sorting through algorithm analysis
- Digital Computers: Learning about the basics of low-level programming and developing a repertoire of ARM architecture

## AWARDS AND SCHOLARSHIPS

- Schulich Leader Nominee, for innovation and leadership skills in the fields of STEM, 2015
- University of Waterloo President's Scholarship, for 94% entrance average, 2015
- Cardinal Collins Achievement Award, for achieving above 90% average throughout all of high school, 2015

## SOFTWARE

### LANGUAGES

Proficient
C++ • C# • Java • HTML5 • XML
Familiar
C • CSS • Android • Matlab

### SOFTWARE

Proficient
Visual Studios • Android Studio • Arduino
Familiar
Eclipse • Bootstrap • git • SVN