

Thomas Arellano

Computer Engineering

tgarella@uwaterloo.ca | tarellano.com | github.com/tarellano | 226.821.1773

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 screens for vehicle registration 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 animations

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

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

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 an average above 90% throughout all of high school, 2015

SOFTWARE

LANGUAGES

Proficient

C++ • C# • Java • HTML5 • XML

Familiar

C • CSS • Android • Matlab

SOFTWARE

Proficient

Visual Studio • Android Studio • Arduino

Familiar

git • Bootstrap • Eclipse