

# Omar Alashqar

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## Skills

**Languages** Java, C++, JavaScript, Python, PHP

**Stack and Tools** NodeJS, ExpressJS, ReactJS, Firebase, MySQL, MongoDB, Git

## Experience

### Software Developer | Rich Media

Toronto Jan - April 2018

- Built progressive web apps and websites for financial institutions using ReactJS and Angular5 that parse REST API responses
- Implemented and maintained custom modular libraries in JavaScript for interactive data visualization similar to D3.js
- Pioneered research and development for a Google Home project involving natural language processing and backend processing
- Optimized development workflow by writing custom Webpack plugins for managing i18n for large websites
- Improved workplace productivity and client interaction by adding a layer of project tracking

### Lead Programmer | FIRST Robotics Team 6378 - LYNX

Mississauga Oct 2016 - Jun 2017

- Programmed robot using the FRC WPI Robotics Library in Java with feedback from external sensors and driver control
- Prototyped and implemented various controllers to manipulate PWM based subsystems utilizing PID with relays and encoders
- Developed autonomous robot routines for driverless functionality with error correction algorithms
- Optimized network communication performance between the robot and the DriverStation by eliminating networking issues

## Projects

### Lazorboi | Laser display embedded system written in C

- Developed a custom CLI for controlling an embedded system that produces input visualization via dynamic laser displays
- Implemented motor interaction between the Onion Omega2 board and motors with GPIO and a motor controller chip to modulate output voltage
- Cross-compiled programs on a UNIX system with mips architecture and loaded them onto the board with SSH
- Implemented input manipulation algorithms for processing input to produce laser patterns by controlling multiple motors

### Stiki | Responsive web app for storing and accessing your notes from a realtime database

- Modularized UI components and managed data binding and templating with Angular4 to reflect realtime models
- Integrated realtime storage with Firebase to seamlessly sync the app with the database
- Deployed the NodeJS app on Firebase hosting with analytics

### SLSS Announce | An online announcements system

- Prototyped a responsive web app to host and edit my highschool's daily announcements
- Developed separate student and admin pages for different functionalities of view-only and editing capabilities
- Implemented PHP endpoints to manipulate a MySQL database where posts and user preferences are stored
- Integrated user authentication for registered accounts with basic md5 data encryption and customizing preferences

### Arduino robots | Sensor enabled robots

- Assembled and programmed Arduino embedded systems with sensor and motor components in Arduino flavoured C
- Built an accelerometer chip controlled custom RC car with varying acceleration
- Created a fully automated maze solving car that stays on track without walls with ultrasonic sensors

## Activities

### Co-Founder & Tutor | High school Code Club

Mississauga Oct 2016 - Jun 2017

- Co-Founded and tutored my high school's first Computer Science club
- Introduced students to coding in Python and trained experienced programmers in Java with coding challenges
- Participated in the 2017 ECCO programming contest as a team
- Prepared and participated in the 2017 CCC University of Waterloo contest

## Education

### Candidate for BAsC in Honours Computer Engineering | University of Waterloo

2017 - 2022

- Developed state machines for processing input, discrete time physics simulations, and other C++ programs for a CS course