Omar **Alashqar**

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Skills

Languages Java, C/C++, JavaScript, Python, PHP, Bash, VHDL
Stack and Tools NodeJS, ExpressJS, ReactJS, Firebase, MySQL, MongoDB, Git, Vim, SSH, GDB, Linux, Quartus

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 and other routine tasks
- Improved workplace productivity and client interaction by introducing a project tracking and logging system to existing projects

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 to navigate an arena
- 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 artitechure and loaded them onto the board over SSH
- Implemented input manipulation algorithms for processing input to produce laser patterns by controlling multiple motors

Spotirave | Audio visualization webapp for your Spotify playlists
- Developed backend server with ExpressJS to host a responsive ReactJS UI and handle API calls, all deployed on Heroku
- Implemented OAuth login system to authenticate with the Spotify Web API to acces user playlists and provide personalized experiences
- Processed audio data with Fast Fourier Transforms to achieve music visualizations

SLSS Announce | Online announcement prototype for my highschool's daily announcments
- 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

Stiki | Responsive web app for storing and accessing your notes from a realtime database
No Chill | Crossy road game clone using Java and endless random generation

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 to boost students' interest in technology
- 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 and 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 advanced C++ programs for a CS course
- Designed and implemented gate level and higher level digital circuits for FPGA hardware with VHDL and Altera Quartus