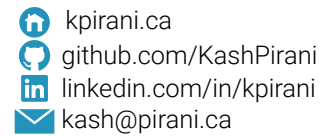


# Aakash Pirani



## SUMMARY

- Experienced in **C/C++, Python, Batch, VBS, Arduino, HTML/CSS**
- Familiar with embedded platforms: **Arduino, STM ARM Cortex Boards, Onion Omega, Altera FPGA, NXP Multi-core MCUs, Qualcomm MSM**

## SKILLS

### Embedded

- Experience reading and writing technical documentation
- Worked with **I<sup>2</sup>C, SPI, UART, CAN**
- Developed and debugged firmware for **AUTOSAR, QNX**
- Experience **cross compiling** in a **Linux** environment using **GNU, Makefiles, Linker Files, Pragmas**
- **Debugged multi-threaded firmware** over **JTAG** using **GreenHills** software

### Languages

- 3 years formal education **C++**
- 1 year formal education **Python**
- Developed with **HTML/CSS**
- Scripting experience with **Batch** and **Visual Basic**

### Software

- **Altium CircuitMaker**
- **Vector DaVinci Suite**
- **Altera Quartus Prime (VHDL)**
- **Atlassian Agile Tools**
- **Git, Jenkins, Test Rail**
- **Adobe Suite**

## EDUCATION

### University of Waterloo

Candidate for a Bachelors in Electrical Engineering  
2018-2022

## EXPERIENCE

### Ford Motor Company

#### FIRMWARE DEVELOPER

May 2018 - August 2018

- Developed for the CAN gateway and modem in C and Python
- Integrated in-house firmware with a custom AUTOSAR OS
- Implemented a custom protocol for inter-chip communication
- Worked in an Agile environment, and created a full build path
- Improved software download speeds over CAN by 246%

### Waterloo Formula Electric

#### TELEMETRY - HARDWARE PROJECT LEAD

Sept 2017 - Present

- Assembled a two node CAN Bus using STM F0s, MCP 2515, 2562
- Designed a telemetry system to transfer sensor data from the car's CAN bus over radio to a remote base station
- Wrote C libraries to integrate various peripherals with the STM F0

### Waterloo Nanorobotics

#### SAM ROBOT - ELECTRICAL LEAD

Oct 2017 - Present

- Updated robot design to use transistor H-bridges instead of relays, improving effective control of solenoids
- Wrote Arduino programs to control movement of a 300 micron robot using keyboard controls

### LandSolutions LP

#### ACCOUNTING INTERN

Aug 2016

- Reconciled accounts payable and receivable using Quickbooks
- Revised internal website to enable quick access to popular widgets

## PROJECTS

### Alarm Plus Plus

#### WEATHER CONNECTED ALARM CLOCK

Nov 2017 - Present

- IoT Alarm Clock that used an Onion Omega2, 7-segment display and LEDs to portray time and weather using preset light patterns
- Wrote custom C++ libraries to interface with LEDs and display; used Wunderground API to fetch location specific weather
- Cross compiled code in an Ubuntu environment via makefiles, utilizing the Linux command line and GNU

<https://github.com/KashPirani/AlarmPlusPlus>

### IoT Irrigation Controller

#### WIFI CONENCTED WATERING SYSTEM

Nov 2015 - April 2016

- Autonomously controlled sprinkler and irrigation systems using an Adafruit Feather Huzzah (Wi-Fi connected MCU)
- Wrote software that combines moisture sensor data and real time forecasts to create optimum watering schedules