Jason Kim

Mechatronics Engineering

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Skills

- Proficient in C/C++ development and Python scripting
- Experience with Arduino Uno, Raspberry Pi, ARM Cortex-M Series, soldering, and lab testing equipments
- Knowledge of ROS and SLAM, 2D/3D modelling with AutoCAD and SolidWorks, and PCB design with Altium Designer
- Development Tools: Git, Eclipse, Keil, and IAR Embedded Workbench

Projects

See More at:
www.jasonkiim.com

Space Invaders

- Integrated embedded components such as switches, LED, and the slide pot on **TM4C123 LaunchPad** to create the game controller
- Manipulated and represented graphic images as 2D arrays for the game design on a LCD screen
- Wrote device drivers for the **DAC** for sound, and the LCD for graphic design and applied modular programming concepts in **embedded C**, on the **Keil IDE**

Digital Colour-Based Sorter

- Designed and built an autonomous sorting robot that dispenses and categorizes various coloured balls
- Integrated **Lego NXT** and multiple sensors and servo motors, programmed in **ROBOTC**
- Used sensor feedback to map the rotation of the robot and adjusted the location of the bins correspondingly

ARM Cortex-M4 MCU : Embedded Systems Course

University of Texas, via edX.org

- Applied interrupt-driven design concepts in **embedded C** and utilized **ADC/DACs**
- Interfaced with sensors and **I/O** via **SPI**, **I2C** and **UART** communication protocols

Autonomous Fuel Cell Vehicle

- Developed an autonomous hydrogen fuel cell powered vehicle executed on a **MSP430 microcontroller** based evaluation board
- Deployed **embedded C** on **IAR workbench** and accomplished self-navigation of multiple mazes through car-mounted sensors in sync with a line-following algorithm

Stepper Motor Driver

- Created and assembled an algorithm for a stepper motor driver with digital logic chips, using using XOR gates and dual JK flip-flops
- Developed an initial circuit design using **National Instruments Multisim**
- Soldered and tested the driver using electronic test equipments

Interests

- Rapid prototyping with **Arduino** and **Raspberry Pi**
- Running to challenge and improve myself in track and field activities
- Solving puzzles as a means to hone my **problem solving skills** and **logical thought process**

Education

University of Waterloo | Mechatronics Engineering B.A.Sc
September 2015 - 2020 (Expected), Waterloo, Ontario, Canada