PRUTHVI ATODARIA

3rd Year Mechatronics Engineering Student with a Passion for robotics, automation, and back end software development

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KEY COMPETENCIES

Software: C, C++, C#, SQL, JavaScript, JQuery, HTML/CSS

Hardware: PCB design, analysis, and debugging, Soldering

Operating Systems: Linux (Ubuntu, Raspbian), Windows

KEY INTERESTS

Automation, Application Development, Web Development, Robotics, AI, Machine Learning

EDUCATION

Bachelor of Applied Science, Mechatronics Engineering
Class of 2018
University of Waterloo

WORK EXPERIENCE

Software Consultant — January 2016 – April 2016
BDO Solutions

- Developed a **.NET cloud application** for the Dairy Farmers of Ontario
- Implemented **SQL stored procedures** to perform repetitive, data intensive tasks in order to improve overall efficiency of application (reduced execution of some tasks by up to 50%)
- Collaborated with client (Dairy Farmers of Ontario) to review requirements and deliver a complete solution
- Improved personal efficiency rating from 40% to 90%

Technologies: C#, SQL Server, Transact-SQL, JavaScript, JQuery, HTML/CSS

Software Developer — September 2014 – December 2014
VerifEye Technologies

- Developed a **serial communication API in C** for embedded devices to receive data from external camera system through a serial interface
- Fortified API by writing **UNIX bash scripts** to create random scenarios that activate data transfer between embedded device and camera system and running them overnight.
- Developed a **C# desktop application** to automatically install firmware onto a custom embedded system, configure the system, and test functionality of the system.

Technologies: C#, C, Bash, WPF, XAML

Software Developer — May 2015 – August 2015
Edisoft Inc

- Developed a **.NET web application** that allows users to send and receive different EDI documents
- Implemented functionality to transform user input forms into EDI documents and vice versa

Technologies used: C#, SQL, JQuery, HTML/CSS

PROJECTS

Obstacle Avoidance Car

- Autonomous Arduino based car that uses sonar sensors to avoid obstacles
- H-Bridge was used to achieve PWM motor control, including speed and direction control
- A C program, available on github, was used to control the car

Technologies: C, Arduino, Sonar sensor, H-Bridge

RTOS Snakes

- Classic game of snakes was developed in C for a KEIL Evaluation Board running an ARM Cortex M-3 processor
- Multithreading was used to achieve tight polling on a joystick used to control the snake's movement while also allowing the snake to move ahead in specified direction, grow after eating food, and die after eating self
- Hardware interrupts were used to activate and deactivate a pause menu
- Semaphores were used to ensure that a new food block is created only after the current block is eaten
- Linked List data structure was used to build the snake's body

Technologies: C, KEIL evaluation board, KEIL µVision debugger

Line Following Robot

- Designed and built a light sensing circuit involving a difference amplifier, photodiodes, and IR transmitter to detect and amplify difference in reflected light between the two photodiodes
- Designed and built a magnet sensing circuit involving a hall effect sensor and an inverting amplifier to detect magnetic fields
- Programmed robot in C to adjust course based on input from difference amplifier in order to follow the line

Technologies: C, Signal amplification circuits, Signal generator, Oscilloscope