Hamdan Chaudhry

UNIVERSITY OF WATERLOO
2B MECHATRONICS ENGINEERING

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HIGHLIGHTS OF QUALIFICATIONS

Languages: C++ • Python • Java • C • HTML • CSS • Git • Assembly

Software: Data Structures • Algorithms • Memory Management • Threads and Tasks

Hardware: Raspberry Pi • Arduino • FPGA • PLC • CAN • Embedded Systems • FEA

Programs: MATLAB • Solidworks • AutoCad • Robot Framework • ANSYS

RELEVANT EXPERIENCE

Firmware Engineer, Tesla Motors
Palo Alto, CA   Jan 2016 – April 2016

➢ Developed an automated test framework for the Tesla Model X to validate vehicle functionality against different firmware builds

➢ Worked with the CAN and LIN data buses to manipulate vehicle component signals using custom PCB circuits, in order to simulate user-vehicle interaction scenarios

➢ Coded Python modules to interface the CAN signal manipulation with the vehicle components, allowing for control of vehicle components through code

➢ Interpreted and processed signals from the CAN and LIN buses for development and debugging of test platform, using tools such as PCAN Explorer, CANape and CANdb++

➢ Developed test implementations for requirement based Model X vehicle specifications using tools such as Python, Robot Framework, Git, Confluence and JIRA

Programmer Analyst, Community Services Cluster,
Government of Ontario, Toronto, ON   May 2015 – Aug 2015

➢ Main responsibilities included planning, writing and executing manual and automated test cases on government applications, using tools such as VBScript and HP Quick Test Professional

Intelligent Robot, Mechatronics   May 2016 – present
➢ Building and programming an autonomous robot from first principles, using C

➢ Developing the robot from scratch, by applying first principle sensor and circuit design techniques

➢ Programmed to make intelligent decisions to autonomously navigate a route, using sensor data and signal processing

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Motion Controlled Quadcopter, Leap Motion Sensor   Feb 2016 – April 2016

➢ Programmed a Leap Motion Sensor to control a robot's movements through hand movements and gestures, as part of the DTEX competition, team placed first overall
➢ Developed a working software implementation with ROS and Python in order to use the Leap Sensor as a control source for the simulated robot
➢ Extended the interface to map hand gestures in 3-D space, to correspond to the flight controls of a quadcopter

Reflex Testing Game, Raspberry Pi   Aug 2015

➢ Developed an interactive game using Python, working with the Raspberry Pi programming capabilities
➢ Game tests user reflexes by presenting different, commands, upon which the user is required to respond within a specific time interval

Self-Navigating Fuel Cell Car   Sept 2014 – Oct 2014

➢ Worked with an embedded TI MSP430 microcontroller to program, a miniature fuel cell powered car, to autonomously navigate an arbitrary course
➢ Developed an algorithm working in C, to make real time intelligent decisions for autonomous navigation using sensor input, primarily from ultrasonic, and light intensity/color sensors

EDUCATION

Candidate for Bachelor of Applied Science,   Sept 2014 – present

Mechatronics Engineering, Honours,
Co-Operative, Program University of Waterloo, Waterloo, ON

Relevant Courses: Algorithms and Data Structures, Structures and Properties of Materials, Introduction to Microprocessors and Digital Logic, Numerical Methods, Introduction to Computer Structures and Real Time Systems, Sensors and Instrumentation

HOBBIES & INTERESTS

➢ Thoroughly enjoy reading books, mystery and historical non-fiction
➢ Avid tech follower, always stay in the loop about the latest inventions
➢ In my free time I play badminton and table tennis