

## **Education**

**3<sup>rd</sup> Year BSc, Computer Engineering**  
**Expected Graduation: May 2020**

Digital Systems and Software Engineering

**Recipient of Russel Haid Memorial Scholarship**

### **Glove Hand-Rehabilitation Project**

- Member of the electrical sub-team
- Tasked with designing an emergency shutoff switch for pressure release valves and testing methods to improve data reading from sensors

### **Current Relevant Courses (Completion in April 2019):**

#### **Real Time Computing**

- Gained an understanding of real time operating systems and multi tasking techniques
- Built a game 'FPGA Man' with  $\mu$ C-OS-II OS system which is programmed on FPGA board with VGA output

#### **Intermediate Software Engineering**

- Working together with a team of 5 other students to create a software system
- Transformed the card game "Hanabi" into an online java-based game with 6 player capability
- Followed IEEE standards to create requirement, design and testing documentation

### **Completed Relevant Courses:**

#### **Effective Professional Communication**

- Practice with professional public speaking, simulated with a persuasive speech
- Developed skills to write appropriate memos, emails and technical reports

#### **Programming Principles and Practice**

- Practice writing and debugging scripts in Unix Bash
- Created a Time Calculator that receives command line inputs and options

#### **Microprocessor Based Embedded Systems**

- UART networking through Blue-Tooth send and receive modules
- Unlock procedures and interrupt service routines implementations
- Practice using axillaries which includes keypads, sensor equipment and LCD displays.
- Developed clever debugging techniques to help pinpoint soft/hard-ware bugs

#### **Intermediate Data Structures and Algorithms**

- Design and built lists, queues and self balancing tree library within Java
- Use of Dijkstra's Algorithm to compute shortest path of a graph
- Created an Objected Oriented Hospital System application in Java

## Logic Design Using FPGA

- Design, Implement and debug an 8-bit Microprocessor with 256 instruction set
- Utilize a fundamental understanding of logic hardware and implementing designs on an FPGA board, Emphasis on One-Hot-Encoding
- Emphasis on understanding timing diagrams to confirm or debug circuitry
- Design portion of Labs includes building Automated Four-Way Traffic Intersection Lights and 16-bit Pin and Access Card Lock System

## Engineering Physics

- Using Laplace transforms to analyze Resistor-Capacitor-Inductor Circuits
- Applying differential calculus to create and simulate analog filters
- Conceptual understanding of power and magnetic circuitry

## Skillset Overview:

- Knowledge of multi-tasking kernels, and Micro C OS 2
- Developed in-depth hardware and software debugging techniques
- Create code that is Re-usable, Correct and Robust
- Write Pseudo code and Draw Schematics before coding
- Confidence with understanding technical datasheets
- Able to learn programming syntax efficiently
- Basic knowledge with Linux OS and command line operations
- Ability to oversee a System and break components down into smaller manageable parts
- Flexibility and able to shift focus to other areas when needed
- Able to trace through Assembly instruction code

## Software Tool Kit:

- |                      |             |                   |
|----------------------|-------------|-------------------|
| • Verilog HDL        | • Cadence   | • Server Hosting  |
| • MATLAB             | • M.S Excel | • MySQL Database  |
| • Java IntelliJ IDEA | • M.S Word  | • Servlet Engines |
| • C Programming      | • Python 3  |                   |
| • WaveForms Software | • HTML5     |                   |