Joao Guilherme R. F. Lopes

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Portfolio: https://joaoguilhermelopes.github.io/JoaoGuilhermeLopes-Portfolio/

Education

Coventry University | Coventry September 2019 – November 2022
BEng in Computer Hardware and Software Engineering - Upper Second Class (2:1)

Coventry University Group | Coventry September 2018 – July 2019
Foundation Engineering - Upper Second Class (2:1)

Skills

Programming: Java, Python, C, C++, SQL, HTML, VHDL, Assembly
Platforms: Linux (Ubuntu, Slackware, Debian), Microsoft Windows, Android, Mac OS
Hardware: Raspberry Pi, ARM Mbed microcontroller, Arduino, ESP-32
Software: Office, Android Studio, Visual Studio Code, IntelliJ, GitHub, Proteus, Vivado, Mars, Eagle, MATLAB
Communication: Design proposals, technical reports, presentations (large and small audiences)
Languages: English (fluent), Portuguese (native), Spanish (fluent)

Key Projects

Room Conditioning Automation System Using (Mbed - C++)

- Implemented a centralized room conditioning automation system using a STM32F469NI board in Mbed – C++ language to control the elements of a room and regulating them as the user desired.
- Designed the respective system GUI with the respective menus/submenus available for each element.
- Designed and printed a double layer PCB board for the board and all the selected hardware components.
- Created multiple classes, objects, pointers, interrupts, threads and timers and imported some required libraries in order to be able to control automatically/manually the different elements in the system.

Client and Server based Library Management Systems with GUI (Java)

- Designed a GUI system using AWT and swing libraries to manage available data on an SQLite database.
- Developed UML diagrams for each application, representing how the system communicates and develops in the client-server.
- Designed both client and server divisions of the system and developed them with the objective for these to communicate with each other and exchange necessary information over a TCP network.

Bar Graph Display (C++)

- Created an application using sStream library to read, write or create .csv files to plot a desired bar graph table and counting the total amount of characters to display the graph and to fill the required gaps.
- Implemented features to display the bar graph in a 2-dimension space using ASCII art and an optional save option for the developed graph.

Single-Cycle CPU

- Using System Verilog, it was designed a single cycle CPU.
- Extended the processor design to support more instructions like R-Type, sb, andi, and more.
- Implemented these extended features to the code for every new instruction, modifying crucial module areas such as Datapath, controller, decoders, instruction/data memories and interfaces.
- Created a testbench to inspect all the instructions by checking for possible errors.

Experience / Relevant Coursework

Agile Development

- Cooperated as a team with colleagues from different courses with the objective of completing a project of an automation system where it required to develop front end, back end and required hardware.
- As a team leader, took the responsibility of allocating the appropriate tasks for each element in the group regarding their skills and previous experience.
- Made sure that the project met the appropriate quality by maintaining track of version control updates of all the steps and choices required.

Embedded Microprocessor Project

- Designed a system that managed a conveyor belt and the surrounding temperature from a medical warehouse using a PIC18F4520 microcontroller.
- Implemented the login password system with multiple available combinations.
- Coded a temperature regulation system that measures and automatically regulates the surroundings.
- Using a light sensor, created a production line system that counts passing boxes (counter interrupts), that when reaching a certain value, would freeze the entire system for a specific amount of time.
- Designed and tested using Proteus, a simulation schematic of the circuit with all the required circuits, later with substantial hardware.

Activities / Achievements

License – Full UK Driving License — February 2023

Photoshop Certification - Coventry University — March 2022

Java Programming: Arrays, Lists, and Structured Data - Duke University (Coursera) — June 2020

Cyber Security - Coventry University — December 2019

Pascal Programming Language – College — May 2019

Other Experience

July ’21 to Present — Rodizio Rico — Bartender / Meat Carver Restaurant

- **Teamwork/Communication**- Cooperated and communicated to meet costumers demands and complains.
- **Working under Pressure** – Made fast and sensible decisions under pressure to meet deadlines.
- **Integrity** – Dealt with conflicting and difficult situations, leading for the need to act in a conscionable manner.

May ‘19 to June ’21 — Processing Warehouse - Mission Foods — Food Manufacturer / Food Mixer

- **Organization** –Methodic way of thinking and organization by dealing with a substantial amount of work with certain regulations.
- **Maintaining competence –** Kept a professional self-development and performance throughout job.