Arthur Faria Campos

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Skills

Programming C/C++, Python, VHDL, Tcl, Bash, LaTeX
Platforms Linux, Windows, Xilinx Dev Boards, ESP-IDF
Hardware ESP32, Raspberry Pi, ATMEGA, Zedboard, Basys3, MSP430
Spoken Languages English(advanced) & Portuguese(fluent)

Work Experience

Fundacao De Empreendimentos Cientificos E Tecnologicos – Finatec
Brasilia, DF / Brazil

Electronic Engineering Intern
September 2019 – June 2020

- Researched and designed hardware modules for satellite communications protocols such as DVB-RCS2 and DVB-S2, using RTL design in VHDL and bare-metal applications for ARM in embedded C
- Created integration, unit tests, simulations and deployments with automated scripts, utilizing peripherals through cortex-A9 to produce an IP prototype of over 30 tested and validated modules
- Worked with Logic Analyzer (ILA), AXI-JTAG and UART, along with test benches and project version control with Git
- Synthesis, Implementation, Simulation and Time analysis using Vivado

Education

Udacity
Online

C++ Nanodegree Program
December 2022 – March 2023

Functional Programming, OOP, Memory Management, Concurrency

University of Brasilia (UnB)
Brasilia, DF / Brazil

Bachelor of Electronic Engineering
March 2016 – August 2021

Learned data structures and algorithms, embedded operating systems, electronic circuits, digital electronics & reconfigurable circuit

Projects

Udacity Projects (C++)
2023

- Used OpenStreetMap data and the IO2D visualization library to build a route planner that finds a path between two points on a real-world map
- Build a Linux system monitor similar to the widely used htop application
- Optimized a Chatbot using modern C++ memory management techniques
- Multithreaded traffic simulator using a real urban map, to manage intersections and facilitate traffic flow and avoid collisions

Encoding Modules of DVB-RCS2 (C, VHDL, Python)
2021

- Conceived and designed the architecture for the encoding modules present in the DVB-RCS2 protocol using C and VHDL
- Used hardware validation through hardware-in-the-loop test benches and UART communication with a high-level model written in Python

Irrigation System – Irri (C/C++)
2019

- Conceptualized, developed, and tested from scratch an automated, portable autonomous irrigation system with a team of 13 students, leading to successful and efficient water usage for gardening purposes
- Designed and prototyped circuit boards using KiCad for data gathering of humidity soil and temperature, optimizing the water irrigation system to save resources and increase yield
- Managed the integration between the hardware and software of the product, leading to a fully automated system with minimal human intervention

Other Projects (C/C++, Python, UE4)
2019

- Trading Bot: Designed and built algo trading bots in python based on the Markowitz portfolio
- FreeWay: Re-created the Atari game freeway from scratch, including coding in C, graphics design, and sound design using the Allegro library
- RobotVR: Developed an RC car integrated with a VR headset app to transmit real-time images and controls from a first-person view
- Created a Python implementation of Visual Microphone using the MATLAB version

Additional Work Experience

Freelance
Unaí, MG / Brazil

Junior Journeyman Electrician
October 2021 – September 2022

- Installed and replaced faulty switches, sockets, plugs, and completed the electrical installation of over 5 houses
- Identified and diagnosed electrical problems while ensuring compliance with safety standards, such as NBR-5410
- Interpreted blueprints, schematics, and diagrams for each new project, and completed the electrical installation of 2 rural buildings