Paulo Fylippe Sell | Resume

Status: Telecommunications Engineer
Fields: Embedded Systems, Hardware Acceleration, Signal Processing
Techs: C/C++, Python, VHDL, Matlab, Java, Git
Activities: Games, Reading, Coding, Investing

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Summary

I am a Telecommunications engineer based in Santa Catarina, Brazil. I graduated from the Federal Institute of Santa Catarina and my bachelor's thesis involved developing a framework for secure and reliable firmware updates for microcontroller-based embedded devices. Currently, I am pursuing a master's degree in Applied Computer Science at the University of Vale do Itajaí (UNIVALI), specializing in Embedded Systems. My research will be centered around improving energy efficiency and enhancing throughput in FPGA-based hardware accelerators for deep neural networks.

Experience

Product Development Analyst - Intelbras — feb 2022 - present

· Responsible for the backend development of embedded code in home & office routers, including implementing new product features, managing device behaviors, and providing real-time device status information through REST APIs and MQTT broker in Linux-based embedded solutions.

· Mostly used C and Shell.

· REST API | MQTT broker | TCP/IP Stack

Software Developer / Reseacher - Federal Institute of Santa Catarina — may 2021 - feb 2022

· Developing technical specifications and requirements for a Fiscal Authorization Device (DAF) for Electronic Consumer Invoice (NFC-e) usage in Santa Catarina. Tasks included secure hardware study, API and USB communication protocol writing, firmware development, DAF integration with complementary software, and contributing to DAF certification rules.

· Mostly used C/C++ and Python for firmware and complementary software development.

Education

Master's degree in Applied Computer Science - University of Vale do Itajaí — 2023 - present

· Specialization in Embedded Systems.

· Energy efficiency improvement and throughput enhancement in FPGA-based hardware accelerators for deep neural networks.

Bachelor's degree in Telecommunications Engineering - Federal Institute of Santa Catarina — 2015 - 2021

· Development of a framework for secure and reliable firmware update for microcontroller-based embedded devices.

· Award for best full paper at the 15th Workshop on Scientific Initiation and Undergraduate Research (WTICG) of the 21st Brazilian Symposium on Information Security and Computer Systems (SBSeg 2021).

Academic Experience

Research Student - Federal Institute of Santa Catarina — 2020 - 2021

· Development of the specification and the proof of concept of an embedded low-cost secure fiscal authorizing device for the state of Santa Catarina.

Research Student - Federal Institute of Santa Catarina — 2019 - 2019

· Development of a DSP block for an Modified Discrete Cosine Transform (MDCT).

· Mostly used Matlab and VHDL

Fields of Knowledge

· Embedded systems, wireless communication, protocol design, deep neural networks, RF, electric circuits, telecommunication systems, distributed systems.