DANIEL DUCLOS-CAVALCANTI

American/Brazilian Electrical and Computer Engineer by the Technical University of Munich. Experienced in Low-Level, FPGA, and Embedded development; as well as TinyMl-related applications. Currently, more interested in Natural Language Processing as a field of research.

EDUCATION

M.Sc. Electrical/Computer Engineering, TU Munich

Oct 2020 - Now

- GPA: 3.0 (American Standards) | 2.5 (German Standards)
- Currently enrolled in last semester

B.Sc. Electrical/Computer Engineering, TU Munich

Feb 2017 - Sept 2020

- GPA: 3.1 (American Standards) | 2.2 (German Standards)
- Bachelor Thesis, 1.3 Netlist Error Modeling
- Unfinished Previous B.Sc., PUC-RIO, Brazil 144/238 Credits from 2013-2016

EXPERIENCE

Working Student, EDA Department - TU Munich

Iul 2022 - Oct 2022

Assisted ongoing research within the Electronic Design Automation (EDA) department at TUM.

- Python development to automate and build a Design-Space-Exploration framework.
- Framework's goal was to find optimal heteregeneous hardware configurations to run inference on given ML models.

Working Student, Molabo GmbH

Aua 2021 - Ian 2022

Assisted the motor-drive team, developing for their Embedded and FPGA devices.

- Responsible for the team's Jenkins Pipeline, hand-crafting Jenkinsfiles and supervising successful pipeline execution.
- Began containerized unit tests in C++ through gTest/GoogleTest with coverage via gcov. Aided development on embedded C code and VHDL Modules for the company's SoC.
- Built toolchains via CMake and GNU Make.
- Automation through one-off Python and Bash scripts.

Tutor, RCS Department - TU Munich

Aug 2021 - Jan 2022

Assisted in teaching the Embedded Systems Programming Lab course given at TU Munich.

■ Helped students during their course work and their final project, which consisted of writing FreeRTOS applications in C.

Research Intern, RCS Department - TU Munich

Oct 2020 - Feb 2021

German - Fluent

Spanish - Beginner

- Full-time research intern at the Real-Time Computer Systems department within TUM.
- Working with Google's Edge Coral TPU and benchmarking it's performance. Benchmarking is done through the analysis of USB traffic during model inference (Wireshark, pyshark)
- Automated the training, freezing, inference and hardware deployment of several ML Models through Tensorflow.

SKILLS

- Embedded/Low-level Development: C(Experienced), Rust(Basics)
- Scripting: Python(Intermediate), Lua(Intermediate), Bash(Experienced)
- Tool-chain Development: CMake, GNU Make, Git, Ansible
- Containerization/CI and CD: Docker, Jenkins, Travis CI
- Frameworks/Tools: OpenMPI, OpenMP, Tensorflow, GoogleTest, PyTest, Python CFFI, SDL2
- OS/Systems: FreeRTOS, Contiki OS, Linux, Arch Linux, Übuntu
- Wev Development: Basics of HTML, CSS and Javascript

PROJECTS CERTIFICATES LANGUAGES English/Portuguese - Native FreeRTOS Space Invaders (C) UCSD: Data Structures Fundamentals

Hamming-Code Error Detection (VHDL/C) Serve (golang): small cli tool

UT Austin: Embedded Systems - Microcontroller I/O NUS - Singapore: Natural Language Processing - Foundations