DANIEL DUCLOS-CAVALCANTI

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American/Brazilian Electrical and Computer Engineer by the Technical University of Munich. Experienced in Systems, SoC and Embedded development, as well as TinyMl 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 ***Jul 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 ***Aug 2021 – Jan 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***

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.
- 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, Ubuntu
- Wev Development: Basics of HTML, CSS and Javascript

PROJECTS

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

CERTIFICATES

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

LANGUAGES

English/Portuguese - *Native*
German - *Fluent*
Spanish - *Beginner*