

DANIEL DUCLOS-CAVALCANTI *(PDF)*

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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, 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 heterogeneous 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.

- Supervised and responsible for the team's CI Pipeline via Jenkins.
- Development of:
 - Jenkinsfiles to automate integration and development.
 - containerized unit tests in C++ through gTest/GoogleTest with code coverage via gcov
 - embedded C code for microcontrollers, VHDL Modules for FPGAs
 - build Systems/toolchains written in CMake, Make with use of Dockers
 - Python and Bash scripts to automate development

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, benchmarking it's performance 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

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*