DANIEL DUCLOS-CAVALCANTI

Dual Citizenship: U.S. & Brazil **Languages:** ***English, German, Portuguese***

www.duclos.dev me@duclos.dev +1-516-912-7975 New York, NY, USA duclos-cavalcanti

I'm a Computer and Electrical Engineer from the Technical University of Munich, where I'm also soon to receive a M.Sc. Degree from. As of now, I'm completing the very last credit for this program externally in New York via a research collaboration with Dr.Sivaraman from Systems@NYU. I'm currently looking for permanent full-time software engineering roles that fit my background and interests within the New York area.

EDUCATION

Visiting Non-Degree Graduate Student

New York University, Courant Institute of Mathematical Sciences

Sept 2023 – May 2024 New York, USA

- Collaboration: Jasper: Fair Multicast for Financial Exch. in the Cloud
- Research Work Co-advised by:
  - Dr.Sivaraman from Systems@NYU
  - Prof. Dr.-Ing. Wolfgang Kellerer from LKN@TUM

The work leverages the current desire to migrate financial exchanges to the public cloud. However, the lack of an available cloud-native multicast mechanism still inhibits said shift. Jasper presents itself as a solution, employing an overlay multicast tree, clock synchronization, and more to achieve a fair and performant cloud-tenant multicast prototype. Beyond aiding in its development, and porting it across cloud platforms such as AWS and GCP, the core of my contribution relies on developing a heuristic to better select VMs across Jasper's tree-like network, which is being utilized as my final master thesis credit for my original university TUM.

M.Sc. Electrical and Computer Engineering

Technical University of Munich

Oct '20' – **Graduation: Sept 2024** Munich, GER

- M.Sc. Thesis *(Last Credit performed Externally in NY)*
- EI70530: Embedded Systems and Security
- EI71104: Embedded System Design for Machine Learning
- EI78039: High Performance Computing for Machine Intelligence
- EI78014: Secure SoCs for IoT

B.Sc. Electrical and Computer Engineering

Technical University of Munich

Feb '17 – Sept '20 Munich, GER

- **German GPA:** 2.2 (Top 37%) – See Grade Distribution
- EI06861: Embedded Systems Programming Lab (Tutor)

CERTIFICATES & MISC

- UCSD: Data Structures Fundamentals
- UT Austin: Embedded Systems - uC I/O

PERSONAL PROJECTS

- FreeRTOS Space Invaders [C, RTOS, Multi-Threaded]
- (16,11) Hamming-Code Err. Detection [C, VHDL, FPGA]
- OpenMPI Value Iteration [C++, HPC, Distributed]
- Serve [Golang, CLI, Tooling]

EXPERIENCE

Research Assistant

EDA Department - TU Munich

Jul'22–Oct'22, Oct'20–Mar'21 Munich, GER

Two-Part internship, where I was part in developing a Design-Space-Exploration framework to optimally run the inference of Machine Learning Models across heterogeneous hardware, including GPUs, CPUs, TPUs and embedded devices. One effort consisted of analyzing USB traffic during inference on Google's Coral Edge TPU.

Internship - Embedded Engineer

Molabo GmbH

Aug '21 – Jan '22 Ottobrunn, GER

Assisted the motor-drive team as a part-time working student. Responsiblities consisted of developing streamlined workflows via Jenkinsfiles, CMake and GNU Make, as well as developing and unit-testing features for their Embedded/FPGA devices.

Tutor - Embedded Systems Lab

RCS Department - TU Munich

Apr '21 – Aug '21 Munich, GER

Tutor for the Embedded Systems Programming Lab course given at TU Munich. Aided students regarding their course work and their final project, which consisted of writing embedded FreeRTOS applications in C.

SKILLS

C++ | Linux | Embedded Systems | Cloud | Python | FreeRTOS | IoT | VHDL | FPGAs | C | TCP/UDP/IP | DPDK | USB | UART | AWS | GCP | Terraform | Docker | Packer | Vagrant | Bash | CMake | Unix | Git | Computer Networking | Operating Systems | High-Perf. Computing | OpenMP | OpenMPI | Tensorflow | TFLite | TinyML | CI/CD | Jenkins | Golang | Lua | Rust | JavaScript