DAVIDE MENINI

+41 789779990
davide.menini96@gmail.com

Date of birth 31/01/1996 ◇ **Nationality** Italian
Residence Zürich, Switzerland

EDUCATION

M.Sc in Information Technology and Electrical Engineering *09/2018 - 04/2021*
ETH Zürich, Switzerland – Overall GPA: 5.35/6

B.Sc in Electronics Engineering *09/2015 - 07/2018*
Politecnico di Milano, Italy – Overall GPA: 110/110

WORK EXPERIENCE

Teaching Assistant *10/2019 - 01/2020*
Institut für Integrierte Systeme (IIS) - ETH Zürich

· Worked in a team to help students during the laboratory sessions of "VLSI I: from Architectures to VLSI Circuits and FPGA", held by Prof. Luca Benini.

SKILLS

Programming Languages	Assembly, Bash, C, LaTeX, MATLAB, Python, SystemVerilog, Tcl
Software Tools	Microsoft Office, industrial EDA tools, Git
Software Libraries	CUDA, TensorFlow, PyTorch, OpenCV, OpenMP, FreeRTOS
Languages	Italian (native), English (fluent), German (beginner)

PROJECTS AND RESEARCH

Real-Time 3D Reconstruction and Semantic Segmentation *10/2020 - 04/2021*
Master's Thesis at CVL - ETH Zürich

· Generated 2D and 3D semantic datasets of synthetic indoor environments.
· Developed a real-time learning-based system for 3D reconstruction and segmentation of indoor scenes through volumetric fusion of ToF depth images.
· Worked with Python, PyTorch and several 3D visualization and simulation tools.

Neural Style Transfer for Ultrasound Imaging *03/2020 - 06/2020*
Semester Project at CVL - ETH Zürich

· Applied Neural Style Transfer on simulated ultrasound images to improve their quality and realism.
· Implemented many variations of the basic optimization approach and compared their performances.
· Implemented a learning-based approach to achieve real-time style transfer.

NVDLA Meets PULP *03/2019 - 06/2019*
Semester Project at IIS - ETH Zürich

· Implemented NVIDIA Deep Learning Accelerator (NVDLA) in UMC 65nm technology node.
· Performed trace test simulation with Synopsys VCS, synthesis with Synopsys Design Compiler and power analysis with Synopsys PrimeTime.

Other Experiences *09/2018 - 06/2020*

Projects from various courses at ETH Zürich

- Heterogeneous CPU-GPU acceleration of a text database inverted index search (*Python, C, CUDA*).
- Implementation on ARM Cortex-M7 of a lightweight learning-based face detection algorithm trained on the WIDER Face Dataset (*Python, TensorFlow, STM X-CUBE-AI, C*).
- Low-power and low-latency design and implementation of a sensing task on a wireless sensor network using STM32L433 nodes (*C, FreeRTOS*).
- Behavioural analysis using Hierarchical Gaussian Filtering to detect anxiety patients during COVID-19 lockdown (*MATLAB, JavaScript*).
- FPGA implementation of a video filter application (*SystemVerilog, Tcl, Xilinx Vivado, ModelSim*).
- Exercises on integrated circuits back-end design (*SystemVerilog, Tcl, Cadence Innovus, Synopsys Design Compiler, Cadence Encounter, Mentor Graphics Calibre*).
- Several regression and classification tasks on medical data (*Python, TensorFlow*).
- Several simulations of single carrier PSK/QAM modulation, coded OFDM modem and BLE RSSI-based user localization and tracking (*MATLAB*).

SPORTS AND INTERESTS

Athletics	All-state 100m sprinter for the university athletic team "CUS Pro Patria Milano".
Football	Played at competitive level for 10 years.
Music	Attended some official competitions of classic guitar.