Luca Dalmasso

Embedded Systems Engineer ·

+39/ 3208686400 | luca.talpax@gmail.com | March 3rd, 1997 | github.com/Luca-Dalmasso |

live:.cid.347a488adb2cc538

Personal Profile

Highly motivated student with some work experiences gained during my studies. I am very much passionate and interested in computer engineering, in particular everything related to the world of microcontrollers and FPGAs. Primarily interested in ASIC hardware/firmware design, also looking for embedded linux developer roles.

Education

Politecnico di Torino *Turin, IT*

MSc in Computer Engineering, Embedded Systems *2020 - 2022*

Politecnico di Torino *Turin, IT*

BSc in Computer Engineering *2017 - 2020*

Work Experience

SISTEMATICA S.P.A *Città di Castello (PG), IT*

Programmer Analyst *April 2020 - July 2020*

- Development of a Raspberry-Pi tool for the communication, through CAN bus, with the Vehicle Control Unit of the FCA e-Ducato 2020.
- **Technical Skills:** Python, C, Linux, Linux tools, Scripting, Git.
- **Soft Skills:** Teamwork and Communication

I.S.C.S srls *Turin, IT*

Programmer Trainee *June 2019 - Sept 2019*

- Development and release of a iOS and Android application for wearable devices.
- **Technical Skills:** C#, Bluetooth Low Energy, Xamarin framework, Git
- **Soft Skills:** Teamwork, Scrum Methodology.

University Projects

Design of a DLX processor *Politecnico di Torino, IT*

Microelectronic system course *2021*

- RTL design, synthesis and physical design of a 32-bit RISC core using VHDL and EDA tools (ModelSim, Synopsys and Innovus)
- Load-Store architecture with 4 pipeline stages.
- Integer subset of the DLX ISA.
- Customized ALU implemented using optimized arithmetic blocks of the Pentium 4 and UltraSPARC T2 processors.
- Basic Hazard Detection features.
- Software automation toolchain for testing the design at RTL-level with custom assembly programs.
- Synthesis scripts using Synopsys commands.
- **Technical Skills:** ASIC design, EDA tools.
- **Soft Skills:** Time Management, Teamwork, Presentation skills, Report writing.

Design of a LBIST circuit for testing the RI5CY processor *Politecnico di Torino, IT*

Testing and Fault Tolerance course *2022*

- Design of a synthesizable LBIST wrapper for a RISC-V processor with the purpose of covering a given percentage of stuck-at faults.
- Adoption of Test-per-Scan methodology.
- Evaluation of the LBIST impact in terms of area and time required to run a complete test.
- **Technical Skills:** testing of big sequential circuits, ATPG, Test-per-Scan technique, TestMAX, SpyGlass.
- **Soft Skills:** Presentation skills, Teamwork.

Acceleration of a CNN in CUDA for the GPU Nvidia Tegra-X1 *Politecnico di Torino, IT*

GPU Programming course *2022*

- Critical evaluation of the CNN's forward propagation accelerated performances with respect to the CPU version.
- Methodological approach for CUDA-C programming.
- Basic knowledge of Convolutional Neural Networks.
- Knowledge of nvprof command line profiler.
- GPU Nvidia Maxwell architecture
- **Technical Skills:** Markdown, Git, CUDA, Nvprof, Nvidia GPUs, LaTex.
- **Soft Skills:** Report writing, Critical Thinking, Presentation skills.

MC2101: A RISC-V-based Microcontroller for Security Assessment and Training *Politecnico di Torino, IT*

Final Project Work *2022*

- The purpose of my thesis was to design the entire architecture of a simple embedded system, compatible with the RISC-V ISA, that can be synthesized on FPGA and used on a development board.
- RTL design of the bus infrastructure, memory and peripherals
- Software design of system libraries and bootloaders
- **Technical Skills:** LaTex, Git, Microcontrollers architecture, Low-power, RISC-V, Quartus Prime, FPGA, C, ASM, VHDL
- **Soft Skills:** Report writing, Critical Thinking, Presentation skills.

Skills

Programming Python, C, Java, Assembly (x86, ARM, RISC-V), Bash, Tcl.

Hardware VHDL, Verilog, FPGA, Computer Architecture, Microcontrollers

Miscellaneous Linux, Shell (Bash/Zsh/Tclsh), LaTeX, Git, GNU Toolchain, Yocto Project, EDA Tools.

Soft Skills Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Languages

English Professional proficiency

Italian Native proficiency

Open to relocate.