

Francesco Mignone

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EXPERIENCE

ARM

Intern - Functional Safety

Tools: VC-201X, SystemVerilog, C, TCL, Git, Linux, Scripting

Analyzed the dependability of ARM architectures via fault injection and the ISO 26262 standard. Developed tools to automate the fault injection process and analyze the results.

Sophia Antipolis, FR

Mar 2026 - Aug 2026

PROJECTS

DLX MICROPROCESSOR | [Link](#)

Tools: VHDL, Questasim, Design Compiler, Innovus, Assembly, TCL, Git, Linux, Scripting

Full ASIC design of a 5-Stage pipelined 32-bit DLX microprocessor optimized for PPA.

- Subset of DLX ISA: Load, Store, Arithmetic, Logic, Branch and Jump instructions
- Implemented a forwarding unit.
- Developed custom scripts to automate the Simulation, Synthesis and Physical Design process

1D CONVOLUTION ACCELERATOR | [Link](#)

Tools: SystemVerilog, Yosis, OpenROAD, C, TCL, Git, Linux, Scripting

Full ASIC design flow of a 1D Convolution Accelerator with memory tiling. The accelerator is then integrated within a CROC RISC-V SoC. A comparison between the accelerator and a software implementation, on the CROC, of the convolution has been performed to evaluate the performance of the accelerator.

SECEDED ECC | [Link](#)

Tools: SystemVerilog, GTKWave, Git, Linux, Scripting

Design of a SECEDED module to explore ECC techniques and their implementation in hardware. Added a testbench to verify the functionality of the module with a customizable error injection mechanism to test the error detection and correction capabilities of the module.

GBA-SPI | [Link](#)

Ongoing

Tools: KiCAD, Arduino, Raspberry, Git, Linux

Design of a PCB to integrate a Raspberry Pi within a GBA-SP to use it as a portable PC. Developing custom kernel drivers to interface the Raspberry Pi with custom peripherals on the new GBA-SP PCB.

EDUCATION

POLYTECHNIC OF TURIN | *Master's in Embedded Systems*

2024 - March 2027 | Turin, IT

- **Relevant Coursework:** Microelectronics Systems, Synthesis and Optimization of Digital Systems, Electronics for Embedded Systems, Specification and Simulation of Digital Systems, Cybersecurity, Computer Architectures (RISC, ARM), Integrated System Architecture, Testing and Fault Tolerance, Energy Management for IoT, Embedded Architectures for AI and ML
- **Thesis:** Dependability of ARM architecture - During internship at ARM

UNIVERSITY OF PISA | *Bachelor in Computer Engineering*

2017 - 2024 | Pisa, IT

- **Relevant Coursework:** Digital Design, Computer Architectures (x86), Operating Systems, Analog and Digital Electronics, Analog and Digital Communications, Computer Networks, Operations research, Automation Engineering
- **Thesis:** Extension for VSCode to debug a multi-programmed Kernel

SKILLS

Technical C, Assembly x86/RISC-V/ARM, Bash, Git, Linux, Scripting, Docker, GDB

HDL Languages & Tools VHDL, SystemVerilog, Testbenches, Questasim, Verdi, Prime Time, Design Compiler, Innovus, Z01X, Yosis, GTKWave, Quartus Prime, Vivado

Boards & Platforms Tang Nano 9k, Arduino, Raspberry Pi, STM32

Interests Soldering, Electronics, PCB design, 3D Printing and modelling

Languages Italian (Native), English (C1 - IELTS)