Antonio Minighin

Padova, 35139, Italy
+39 329 3528187
toto.minighin@gmail.com

ACADEMIC EDUCATION

Master's Degree in Electronic Engineering 100/110, Università degli Studi di Padova 2023

- Thesis: PWM controller design with Zynq SoC, an embedded control system for switching mode power applications
- Specialization: Analog and digital IC for processing and control systems

Bachelor's Degree in Electronic Engineering 87/110, Università degli Studi di Padova 2019

- Thesis: Sigma Delta ADC for audio applications, how to increase resolution using oversampling and modulation techniques

MAIN EXAMS 1CFU=8h LECTURES | 9 CFU 6 CFU

- Microelectronics
- Analog electronics
- Analogue integrated circuit design
- IC for signal processing
- Digital circuits design
- Computer architectures
- Microcontrollers and DSP
- Machine learning
- Digital signal processing
- Digital control
- Telecommunication
- Microwave devices
- Industrial electronics
- Power electronics
- Electronic measurements
- Quality and reliability in electronics

WORKING EXPERIENCE

Internship at DAVE Embedded Systems, Pordenone 6 months in 2022

- Activity: Embedded system design using Zynq SoC
- Project: FPGA based waveform generator for automatic power up test

Internship at DAVE Embedded Systems, Pordenone 3 months in 2018

- Activity: Hardware acceleration using Zynq SoC
- Project: High-level synthesis of computer vision algorithm using Pynq framework

TECHNICAL SKILLS

System Design

- Experience in HDL programming language for synthesis and functional verification of components in FPGA based devices. Proficient in designing processing pipeline and control interfaces tailored for specific applications.

- Proficiency in programming and configuring embedded devices to achieve SW and HW integration. Experience in accelerating real-time and critical processes by using several techniques like interrupt systems, pipeline processing and parallel computation.

- Good knowledge of PCB realization and its challenges such as signal integrity or thermal dissipation. Knowledge of circuit design techniques for different components like analog precision devices, high-speed digital interfaces and power systems.

- Experience using laboratory equipment for design verification, like oscilloscope, waveform generators, logic analyzers and debuggers. Knowledge of design for testability techniques and continuous integration methodologies.

Programming

- **Languages:** VHDL, Verilog, Assembly, C/C++, Java, Python, Matlab.

- **Devices:** AVR, ATmega, ARM Cortex-M/A, SAM3X, STM32F3, STM32F4, Artix-7, Zynq.

Tools

- **CAD:** LTspice, KiCAD, Virtuoso, Design Vision, Vivado, Simulink.

- **IDE:** Eclipse, Vitis, TrueStudio, Arduino.

- **OS:** Windows, Ubuntu, macOS.

SPOKEN LANGUAGES

-Italian: Native

-English: B2 at Trinity College - ISE II certification

RESUME

Studying electronic engineering was a straightforward decision driven by my passion about music, particularly electric guitar and electronic synthesizers. Alongside the academic courses focused on designing analog and digital IC for processing and control systems, my interests fall on programmable embedded devices, like microcontrollers, FPGAs and CPU architectures. I attended two internships at the DAVE embedded systems of Pordenone (Italy) to get in touch with real world applications and industry standard methodologies. I worked with Zynq technology, an embedded solution for hardware design and software development suited for real-time operations and Linux based systems. With this technology, I managed to build a full-custom switching mode control system for power applications, by designing and testing components in a fully integrated environment. Finally, I discussed the thesis on this project pointing out some topics, like the benefits of hardware parallelization for digital signal processing and the integration of hardware and software for real-time systems. Now I'm looking for a place to start a career as electronic designer, preferably using embedded digital systems, where I can express creativity and apply my knowledge to contribute on valuable projects.