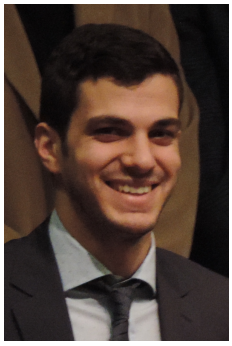
Fabio Busignani

Curriculum Vitæ

via Longiano 26, Santa Giustina
47922 Rimini, Italy
+39 333 1963542
+39 0541 681253
fbusignani@linux.com
LinkedIn



Desidered Employment and Current Skills

Hardware Engineer - Digital Electronics
I have always loved the world of electronics, long before I started my studies in electronics. While I achieved high marks in school, my interest for electronics goes well beyond the academic setting. Indeed in my free time, I love to experiment with microcontrollers and embedded systems boards as well as deepen some interesting topics.
My course of study allowed me to have a strong electronic knowledge, focusing on digital electronics where I made some experience in every level of the design workflow of digital hardware implementation and SoC design.

Technical skills

Languages	VHDL, C/C++, SystemC, JAVA, C#, UML, MIPS Assembly, PIC Assembly, Python, LaTeX
Operating Systems	Linux, Android, Windows
Software Tools	Modelsim, Synopsys Design Compiler, Synopsys Design Vision, Quartus II, Cadence Design Environment, Multisim & Ultiboard, NI LabVIEW, Matlab + Simulink, Android Studio, Qt, mbed.org, IAR, MPLAB, Code Composer Studio
Hardware Platforms	Electronic bench equipment, microPIC, MSP430, FRDM-KL25Z, Beaglebone Black, RaspberryPI, Altera Cyclon II, STM32F401

Education

Oct. 2012 - Mar. 2015 **Master Degree in Electronic Engineering**, *Polytechnic University of Turin*, Turin, Italy.
Specialization in Electronic Systems
Thesis Title: Google Glass Assisted Data Visualization and Monitoring for Organs-on-a-Chip and Biomedical Applications.
Grade: 110/110

Sep. 2009 - Oct. 2012 **Bachelor Degree in Electronics, Informatics and Telecommunications Engineering**, *Seconda facoltà di ingegneria con sede a Cesena - University of Bologna*, Cesena, Italy.
Thesis title: Design of a microcontroller system which controls an electrodynamic shaker.

Sep. 2004 - July 2009 **Electronic and Telecommunications Technician**, *I.T.I.S. Leonardo da Vinci*, Rimini, Italy.
Italian secondary school diploma

Academic Projects

June 2014 **Multithreaded Blowfish Algorithm Implementation**.
Github link.

January 2014 **Design of a 4-state ACS (Add-Compare-Select) with SystemC**.
Design covered the following steps:
- ACS design;
- SystemC implementation;
- Matlab implementation used to verify the results;
- First simulation with G++ compiler and GTKwave viewer;
- Second simulation with SystemC Modelsim;
- Third simulation with Modelsim mixed SystemC-Verilog using a given implementation of the ACS.

Github link.

December 2013 **ASIP design based on Transport Triggered Architecture using TCE**.
Design of an architecture which implements DCT, using *TTA* architecture.
Github link.

November 2013 **FIR ASIC Implementation**.
Design covered the following steps:
- Behavior design with Matlab;
- VHDL implementation;
- Testbench implementation and simulation with Modelsim;
- Switching activity-based power consumption estimation;
- ASIC Place&Route;
- Post Place&Route simulation and switching activity-based power consumption estimation.

Github link.

July 2013 **Low-power serial interface for SoC functional units communication**.
The aim was to make a very low power interface, and in order to do this, certain low power design methods were exploited, such as clock gating and state encoding. Synthesis was made with *Synopsys Design Compiler*.
Github link.

Jenuary 2013 **Butterfly Design using Microcode Technique**.
Design of a processing element which implements a *Butterfly*. In this project several hardware constraints were given, and they were solved through the adoption of the *folding* technique.

December 2012 **Wishbone Implementation**.
Design covered the following steps:
- VHDL implementation;
- Testbench implementation and simulation with Modelsim;
- Synthesis using Quartus;
- Hardware test using Altera Cyclone II.

Working Experience

Apr. 2015 - Present **Firmware Designer**, *Sherlock Bike*, Turin, Italy.
Sherlock is a GPS-based anti-theft device connected to a smartphone app that allows cyclists to precisely locate their bicycles and retrieve them in case of theft.

Aug. 2014 - Feb. 2015 **Research Trainee**, *Khademhosseini Lab (Harvard-MIT Health Sciences and Technology)*, Cambridge, MA, United States of America.
Designed and developed a custom user interface on Google Glass for simultaneous recording of biosensing data (T, pH) and microscopy images/videos as well as remote control of microfluidic valves for organ-on-a-chip applications. In order to fulfill this aim I have designed and created a complete system which is based on Beaglebone Black.

July 2012 - Sep. 2012 **Internship**, *Fortech s.r.l.*, Rimini, Italy.
Worked with the company's electronic engineers, learning about the hardwares present in payment systems of fuel service stations.

2007 - 2010 **Summer Jobs**, *TES s.r.l. and FM s.n.c.*, Rimini, Italy.
Summer job as apprentice electrician and photovoltaic technician.