# Fabio Busignani

*Curriculum Vitæ*

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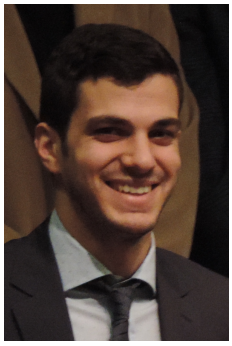

## Info

Born September 8th, 1990 in Rimini (Italy) Citizenship Italian

Driver's License B, A

## 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 sound 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. Indeed my dream is to become a digital designer. What I am looking for is a working environment where I can grow both professionally and personally allowing me to follow my dream.

## 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

## Experience

### Working

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.

### Academic Achievements

2013-2014 **Integrated System Architecture**, *Polytechnic University of Turin*, Torino, Italy.
Design of a FIR filter adopting pipeline technique to achieve the given clock frequency. The softwares exploited are *Modelsim* and *Synopsys*.
Design of an architecture which implements DCT, using *TTA* architecture. The software used is *TCE*, exploited for statistic approach in order to optimize the algorithm.
Design of an *ACS* (Add-Compare-Select) unit. The architecture was described in SystemC. *Modelsim*, *G++* compiler and *GTKWave* have been exploited to simulate the architecture.
Github link.

2013-2014 **Operating Systems**, *Polytechnic University of Turin*, Turin, Italy.
Designed a Multithreaded version of Blowfish Algorithm.
Github link.

2012-2013 **Digital Integrated Systems**, *Polytechnic University of Turin*, Torino, Italy.
Design of an interface which manages the communications in a master-multi slave system. For this project a typical standard protocol of System-on-Chip communications, *Whisbone*,was exploited. The EDA softwares used are Modelsim and Quarts.
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.

2012-2013 **Low Power Electronic Systems**, *Polytechnic University of Turin*, Torino, Italy.
Final Project:
Design of a serial interface that allows the interaction between a control unit and a computing unit. The interface must be specifically embedded inside a system which controls the supply noise inside integrated circuits. The aim was to realize 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*.
Github link.

2012-2013 **Measurement Systems and Sensors**, *Polytechnic University of Turin*, Turin, Italy.
Development of severals measuring benches exploiting *NI DAQ Board*. This Data acquisition board was driven through forms written in C#.

2012-2013 **Digital Microelectronic**, *Polytechnic University of Turin*, Turin, Italy.
Laboratory practices using *Cadence Allegro* to design some masks of digital gates.

2012-2013 **Guiding Electromagnetic System**, *Polytechnic University of Turin*, Turin, Italy.
Designed a stepped impedance RF low-pass filter using *AWR microwave office*.
Github link.

## Technical skills

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

## Social and Organization Skills

During my 6-month experience in the United States I greatly improved my ability to communicate and to work in a multicultural working environment with colleagues with different backgrounds (chemicals, bioengineers, biologists). As a meticulous person, I work hard and pay much attention to details, always aiming to improve myself. I learn new skills quickly and am eager to learn from others. I am able to work by myself as well as part of a team.
I am an active guy, indeed in my free time I really love play sports and train, I also like spend time with friends and play board game.