# Aurelio Colosimo

**Nationality:** Italian   📞 (+39) 3335948817   **Date of birth:** 15/12/1975

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## WORK EXPERIENCE

### Freelance Electronic Engineer
*Self employed* [ 01/01/2006 – Current ]

**City:** Taino
**Country:** Italy

Freelance professional since 2006, mostly as embedded systems engineer in R&D applications, both on Software/Firmware and on Hardware design.

I had the chance to make experience in many sectors and with many clients; here is the list of most relevant ones:

- Research: CERN (software development for White Rabbit project), Politecnico di Milano (Control Monitoring unit for G-Band Link);
- Space: Media Lario srl (ASTHROS project);
- Electronic Manufacturing: Eletech;
- Predictive Maintanance: Bonfiglioli Riduttori;
- Educational and DIY: projects with Arduino and Raspberry PI;
- Home Automation: BTicino, Legrand and Voltaware
- Industrial Automation: Qubica AMF, Gibertini, Artecnica, Ledcom International, A-Pro2;
- Multimedia applications: Radio Marconi;
- Automotive: Soft-in srl;
- some more clients, mostly in Industrial Automation and Telecommunications field.

### Embedded Systems Software Developer
*Tv Blob srl* [ 01/02/2004 – 31/12/2005 ]

**City:** Milan
**Country:** Italy

I worked in a team aiming to develop a distributed multimedia streaming platform, by using an embedded Linux system: Tv Blob was an italian startup which tried to anticipate the success of some subsequent platforms, such as YouTube, though didn't manage to have the same outcome.

### Telecommunications Engineer
*Siemens Mobile Communications* [ 01/05/2001 – 31/12/2003 ]

**City:** Cinisello Balsamo (MI)
**Country:** Italy

R&D department: my task was to study, design and simulate innovative Digital Transmission Systems. During my permanence in Siemens, I could gather remarkable experience on usage of Matlab, Simulink, Cadence SPW and other simulation tools for Telecommunications.

### Electronics Engineer
*Forem srl* [ 01/01/2001 – 30/04/2001 ]

**City:** Agrate Brianza (MB)
**Country:** Italy

VHDL designer on the FPGA implementation of a pre-distortion system for radio transmitter amplifiers.

## EDUCATION AND TRAINING

### Ingegnere delle Telecomunicazioni

*Politecnico di Milano* [ 01/10/1994 – 25/07/2000 ]

**Address:** Piazza Leonardo da Vinci 32, 20133 Milano (Italy)

**Field(s) of study:** Electronic Signals and Systems

**Final grade :** 100/100 Cum Laude – **Level in EQF:** EQF level 7

**National classification:** Laurea quinquennale

**Thesis:** 3D modeling algorithm from images

Many exams taken on Digital Signal Processing, Automation, Computer Science, Digital Electronic and Radio Communication.

Theory and practice on design and analysis of electronic circuits. Basic exams in Mechanics, Physics and Chemistry.

## LANGUAGE SKILLS

Mother tongue(s): **Italian**

Other language(s):

| **English** | **French** |
|---|---|
| **LISTENING** C1  **READING** C1  **WRITING** C1 | **LISTENING** A2  **READING** A2  **WRITING** A1 |
| **SPOKEN PRODUCTION** C1  **SPOKEN INTERACTION** C1 | **SPOKEN PRODUCTION** A2  **SPOKEN INTERACTION** A2 |

## TECHNICAL SKILLS

### Embedded Systems

Linux systems compile from scratch.

Embedded distributions: Yocto, Buildroot Raspbian

Kernel drivers and user space applications.

### Microcontrollers

Hardware design and C language programming of MCUs.

Mostly experienced in ARM Cortex-M: STM32, NXP, Microchip.

I designed my own operating system from scratch: kim-os.

https://github.com/colosimo/kim-os

### PCB Design and Prototypation

Usage of KiCAD tool to create electronic circuits, from schematic up to the Gerber files. When necessary, in my lab I can assemble PCBs by manual solder.

### Programming Languages

C/C++

Bash

PHP

Javascript

Python

VHDL

**Source Code Maintainance**

I mostly use Git and have my personal page on github.

https://github.com/colosimo

## NETWORKS AND MEMBERSHIPS

**Ordine degli Ingegneri della Provincia di Milano**

My registration number is 25422.

## PUBLICATIONS

**PPSi - A free software PTP implementation**

[2014]
https://ieeexplore.ieee.org/document/6948694

This paper describes a new open source implementation of the Precision Time Protocol (PTP) called PTP Ported To Silicon (PPSi). It was developed to fill in a niche in the free software world for a PTP daemon that is easily portable to a wide range of architectures and highly modular to enable protocol extensions - two key requirements of its driving force, the White Rabbit (WR) Project.

**Propagation Experiment Using a G-band Terrestrial Link: Design and Preliminary Results**

[2022]
https://ieeexplore.ieee.org/document/9769183

This contribution presents the design and preliminary results of an electromagnetic wave propagation experiment at G band. The research activity, resulting from the collaboration between Politecnico di Milano and the Huawei European Microwave Centre in Milan, focuses on the design, integration and installation of a custom G-band 325-m terrestrial link connecting two buildings in the university campus.

## PATENTS

**Method of bit and power loading in OFDM communication systems with modulation and coding adaptation**

Patent US US20040233835 A1.

https://patents.google.com/patent/US20040233835A1

**Reference oscillator phase noise compensation circuitry**

Patent EU EP 1443640 A1.

https://patents.google.com/patent/EP1443640A1

## HOBBIES AND INTERESTS

**Chess Instructor**

I play chess in my spare time and have obtained the title of Chess Instructor from Federazione Scacchistica Italiana.