

ALESSANDRO BARONE - ELECTRONICS ENGINEER

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Registered with the Order of Engineers (1995)

Professional Profile

Electronics engineer with **over 30 years of experience** in consulting, software development, and systems engineering. In recent years, my focus has been on **long-range IoT**, designing wireless sensor networks and Internet gateways for industrial applications and quality control. I combine embedded expertise, radio protocols (LoRa, Bluetooth, ESP-Now) and cloud platform development. I have an ongoing collaboration with the Versuni Group (Philips/Saeco/Gaggia) on hardware and firmware, and a solid background in teaching ICT subjects. My activity as a **radio amateur (IK5HKP)** further strengthens my skills in wireless communications and RF.

Professional Experience

Consultant and Freelance Developer

1994 - present | IoT, Embedded Systems, Cloud Integration

- **Systems & infrastructure** - Design and manage physical and virtual servers (VMware ESXi) in data centers and for clients, using Linux (Ubuntu, CentOS, Debian) and Windows. Provide email, DNS, web hosting and domain registration services.
- **Software development & platforms** - Customizations and plugins for Moodle (including BigBlueButton servers for universities), WordPress, Joomla, Odoo (Python plugins). Develop web applications in PHP, JavaScript, Python; manage MySQL/Oracle databases.
- **IoT & long-range communications** - Design IoT device networks based on ESP32, ESP8266 and LoRa modules for production quality control, focusing on long-range communication and low power consumption. Integrate Internet gateways (MQTT, HTTP, proprietary XML) to connect sensors to cloud platforms. Use wireless protocols: LoRa, ESP-Now, Bluetooth.
- **Artificial intelligence** - Research project (2024) for defect detection in serial production using AI and ESP32-based sensors. Since 2025 I integrate AI models (DeepSeek, Anthropic) into web platforms (Python/PHP/JS).

Ongoing collaboration with Versuni Group (Philips / Saeco / Gaggia)

full-time, continuous

- Design hardware and firmware for professional coffee machines and laboratory test benches, using ST microcontrollers (Keil, IAR environments). Expertise in power electronics, analog and digital electronics.


Teaching Activities


- **2024 - present** - Lecturer at the **Accademia della Fondazione Cassa di Risparmio di Pistoia**.
- **2018 - 2024** - ICT teacher in public schools in Pistoia: ITI, Istituto Pacini, Liceo Scientifico Amedeo d'Aosta, Istituto Mantellate, Istituto Tecnico Einaudi.
- **1995 - 2015** - Instructor for European, national, regional and private training courses in IT and systems, on behalf of Centro Studi Cultura Sviluppo.


Education


- **Master's Degree in Electronic Engineering** - University of Florence (1994) - Grade: 98/110
Thesis: "3D Motion and Shape Reconstruction of Objects in Image Sequences"
- **Professional Qualification as Engineer** - University of Padua (1995); registered with the Order of Engineers of Pistoia since 1995.
- **High School Diploma (Scientific Lyceum)** - Liceo Scientifico di Pistoia (1984).


Technical Skills


 Languages: C/C++ (embedded, Borland/Embarcadero), Python, PHP, SQL, JavaScript, Dart, Java (XMPP)

 Systems & Cloud: Linux (Ubuntu, CentOS, RedHat), Windows, VMware ESXi, AWS, Google Cloud

 Web & Database: Apache, Nginx, Tomcat, MySQL, Oracle

 CMS & Platforms: Moodle, WordPress, Joomla, Odoo, pfSense, OwnCloud

 IoT & Firmware: ESP8266, ESP32, ST microcontrollers, LoRa, Bluetooth, ESP-Now, IoT gateways, low-power programming, proprietary protocols

 AI: DeepSeek, Anthropic - integration into web applications

Languages

- **Italian**: native
- **English**: good technical and conversational proficiency

Personal Attributes & Interests

- Solution-oriented approach, organizational autonomy, flexible working hours, excellent communication and team collaboration skills.
- **Radio amateur (IK5HKP)** - expertise in radio propagation, protocols and RF experimentation, supporting wireless communications and long-range IoT.
- Motorcycling, running, mechanics, music, photography.

accordance with GDPR.
Updated on April 1, 2026.