

Antonio Bernardini

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Education

Tor Vergata University B.Sc. in Computer Engineering	Rome, IT 2021 - Present
I.I.S. Enzo Ferrari Technical High School Diploma in Electronics	Rome, IT 2016 - 2021

Experience

<u>Weigence</u> CEO & CTO	Rome, IT Present
<ul style="list-style-type: none">Founded tech company offering integrated ERP solutions with optional IoT hardware for warehouse automationArchitected modular platform with Django backend, Flutter mobile apps, PostgreSQL database, and ESP32 hardware with AI-powered parts recognitionSecured CO.GE. Impianti S.r.l. as first commercial client with successful ERP deployment	
<u>CO.GE. Impianti S.r.l. (via Weigence)</u> Strategic Consultant	Mentana (Rome), IT July 2025 - January 2026
<ul style="list-style-type: none">Implemented complete ERP system for warehouse management with software-only solution (client opted out of hardware integration)Deployed production infrastructure on cloud with containerized services and relational databaseDelivered cross-platform mobile applications for warehouse operations and inventory management	
<u>VectorLab S.r.l.</u> Web Developer & Maintainer	Genoa, IT (Remote) July 2025 - October 2025
<ul style="list-style-type: none">Developed interactive 3D web experiences using TypeScript and Three.jsImplemented clean architecture with design patterns for maintainable codebase	
<u>Open Source Contributions</u> Embedded Systems Libraries	Remote Present
<ul style="list-style-type: none">Contributed 5 PRs to Arduino ecosystem (Modulino, NTPClient, ArduinoHttpClient)Enhanced ESP32 camera drivers in Espressif esp32-camera library	
<u>CleverCode YouTube Channel</u> Creator & Educational Content Producer	Rome, IT 2022 - Present
<ul style="list-style-type: none">Built community of 1.5K+ subscribers with 1.7K monthly views through technical tutorials in ItalianPopular series include Embedded Rust on ESP32, and Git & GitHub comprehensive courses	

Projects

Sudoku Solver | C, Bitmasking, Backtracking

- 3rd Place Tor Vergata Programming Challenge 2023 - Solves 9 sudoku puzzles in 637.9µs average using Bitmasking + Backtracking Algorithm
- Open Source Code: <https://github.com/AntonioBerna/sudoku-solver>

ESP32 Spectrum Analyzer | C++, ESP32, FFT, Signal Processing

- Real-time spectrum analyzer using FFT (radix-2) algorithm implemented in C++ for ESP32
- Open Source Code: <https://github.com/AntonioBerna/spectrum-analyzer>

Valkit | Docker, Valgrind, Cross-Platform

- Docker tool extending Valgrind to macOS with multi-architecture support (amd64/arm64) and glibc compatibility fixes
- Open Source Code: <https://github.com/AntonioBerna/valkit>

Rubber Ducky | Security Research, USB HID

- Security research tool for USB HID attack simulation and penetration testing
- Open Source Code: <https://github.com/AntonioBerna/rubber-dukey>

Finite State Machine Designer | C, LaTeX, TikZ, Automata Theory

- A minimal Finite State Machine Designer implemented in C that generates beautiful LaTeX visualizations with TikZ
- Open Source Code: <https://github.com/AntonioBerna/fsm>

Neural Network Logic Gates | Python, Raspberry Pi, Machine Learning

- LED control system using neural networks to implement logic gates on Raspberry Pi
- Open Source Code: <https://github.com/AntonioBerna/nn-rpi-logic-gates>

Technical Skills

Embedded & Firmware: Arduino, Raspberry Pi, ESP32, STM32, PlatformIO, ESP-IDF, LVGL, CUDA, Embedded Rust

Software Design & Architecture: Design Patterns, OOP, Clean Code, Clean Architecture, SOLID & DRY Principles

Software Development: Python, C, C++, Rust, Django, PostgreSQL, MongoDB, Assembly

Hardware Design: KiCAD, Digital, EasyEDA

Mobile Development: Flutter

Web Development: TypeScript, Three.js, GSAP

AI: Neural Networks, Machine Learning, Computer Vision

DevOps: Git, GitHub, Docker, Heroku, Linode, Google Cloud, Squarespace

Documentation & Teaching: Markdown, L^AT_EX, TeXmacs, Excalidraw, OBS Studio, FFmpeg, Audacity