

# Raul Ciurescu

Embedded Systems & Hardware Technician

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## Profile

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Embedded Systems and Hardware Engineer with strong hands-on experience in STM32, ESP32 and Embedded C/C++. Comfortable taking projects from schematic and PCB bring-up to validated firmware and system integration.

Over the last two years, increasingly involved in technical coordination and process structuring — leading small initiatives, defining testing workflows and improving team efficiency. Interested in roles combining embedded development with ownership, technical leadership and continuous process improvement.

## Technical Skills

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**Core Embedded:** STM32 (F0/F4), ESP32, ESP8266, Raspberry Pi Pico / Pi 5, low-power IoT nodes, board bring-up, lab validation.

**Firmware & Low-Level:** Embedded C, bare-metal ARM Cortex-M, startup code, ISRs, interrupt-driven systems, UART/SPI/I2C/timers, memory-mapped I/O, state machines.

**Software & OOP:** Advanced C++, Java, C#, clean architecture, REST services, multi-layer systems (UI / service / data).

**Electronics & Power:** UPS topologies, DC/DC basics, battery systems, oscilloscope debugging, programmable AC sources, DMM measurements.

**IoT & Networking:** LoRa (SX126x, RFM6501), Wi-Fi, ESP-NOW, MQTT, HTTP/HTTPS, Home Assistant integration.

**Tools:** STM32CubeIDE, CubeMX, TouchGFX, PlatformIO, VS Code, Git, Docker (basic), Linux-based workflows.

**Leadership:** Technical coordination, QA structuring, workshop facilitation, mentoring, process optimisation.

## Experience

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**Hardware Technician — A.C.S.E.M.**

Jul 2025 – Present

Timisoara, Romania

- Coordinated technical activities around on-line and line-interactive UPS platforms.
- Designed structured QA procedures for power rails, inverter stages and battery interfaces.
- Performed component-level diagnostics (MOSFETs, drivers, control ICs) and root-cause analysis.
- Standardised documentation and internal technical reporting workflows.

**Research & Development Assistant — DSPLabs, Politehnica University of Timisoara**

Jul 2024 – Present

- Mentored students on STM32/ESP32 embedded projects and IoT prototypes.
- Developed low-level firmware (C/C++) and contributed to Java Spring and C# back-end services.
- Structured project workflows: UML diagrams, milestones, Git practices.
- Delivered informal training sessions on embedded systems and lab practices.

## **Assistant Programmer — Bluesys SRL**

Feb 2025 – Apr 2025

- Owned a C++ module in a desktop application for industrial refrigeration monitoring.
- Implemented reliable control logic and communication with field devices.
- Translated informal field constraints into structured requirements and test cases.

## **Education**

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**B.Sc. in Computers and Information Technology (English)**      2022 – 2026 (expected)  
Politehnica University of Timisoara

**B.Sc. in Economic Sciences**      2024 – 2027 (expected)  
European University Dragan, Lugoj

## **Projects**

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### **Agri-IoT — Autonomous Greenhouse Monitoring**

LoRa-based ESP32 platform for low-power soil and climate monitoring with Home Assistant integration.

### **Hardware Security Data Diode**

Custom ESP32 + PCB one-way telemetry link with framing, encryption and error detection.

### **X-Tec Long-Range IoT Platform**

Custom RFM6501-based IoT nodes and gateway for environmental monitoring.

## **Volunteering**

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**Liga AC — Politehnica University of Timisoara**      2023 – Present

- Active in Finance and HR departments.
- Organised networking and team bonding events.
- Facilitated internal workshops and training sessions.

## **Certifications**

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ARM Cortex-M Architecture and Software Development — Coursera

STM32 Peripheral Programming — Coursera

Quantum Computing for Beginners — Coursera

Operations Management (in progress)

Six Sigma Green Belt (in progress)

Leading People and Teams (in progress)

## **Languages**

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Romanian — Native

English — C1 reading/listening, B2 speaking/writing