



# MIRKO DONNARUMMA

SOFTWARE ENGINEER

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Mirko Donnarumma

## WORKING EXPERIENCE

### RUST DEVELOPER | QUANTUM 2025-TODAY

- Rewriting a lighting ecosystem (control gears/devices) in **Rust**, creating a modular architecture. Using UML and FSM diagrams to model device states and transitions. Providing modularity and scalability to the code base via a cargo workspace.
- Implementing **Modbus RTU** communication over **RS485** using **tokio-modbus** and **serial2-tokio**. This ensures a robust, consistent, and race-condition-free data flow, ensuring industrial reliability, component isolation, and vertical scalability.
- Developing a custom **ModBus** protocol, including **DALI-2** integration with the concentrator, enables immediate interoperability, fewer adjustments on the concentrator side, and faster rollout of new features; this was made possible by defining deterministic command behavior.
- Ensure data consistency, reduce the risk of information loss, and significantly accelerate incident diagnosis times thanks to data persistence management via **SQLite** relational databases and optimized connection pools (**PRAGMA, WAL**).

### SOFTWARE ANALYST | DST 2022-2024

- Management of complex public and technology projects, progressively evolving from technical roles to coordination and management responsibilities.
- Operational supervision of enterprise applications for public administration, including architectural analysis, drafting technical documentation, team coordination, and direct interaction with institutional clients.
- Planning, coordination, and monitoring of ICT projects for an independent administrative authority, ensuring compliance with defined timelines, budgets, and quality standards.

### FULL-STACK DEVELOPER | ATON SRL 2019-2022

- Development and maintenance of enterprise web applications based on Angular, Spring Boot, Spring Data JPA, and Java 11, with a focus on functional evolution, stability, and optimization of software solutions.
- Responsible for database migration and optimization from Microsoft Access to MySQL, including data normalization, index definition, creation of stored procedures and triggers, as well as analysis and reconstruction of existing logical processes.
- In an international banking context, involved in the development of new features and front-end bug fixing of CRM applications, collaborating with multidisciplinary teams and ensuring compliance with the quality and security standards required by the financial sector.

## WHO AM I

Rustacean focused on developing safe and performing solutions.

To increase my vertical skills, I dedicate part of my free time to personal projects and insights into Rust's areas of expertise — I work with Arduino, in the future ESP32-C6 and Waveshare DALI2 and I look at blockchain, embedded systems, server-side applications and WebAssembly.

## HARD SKILLS

- Advanced Rust
- Concurrency & asynchronous I/O
- Distributed systems architecture
- Projects using Cargo workspaces
- Design patterns
- Rust tooling
- Linux/Unix systems
- Testing & profiling
- Security & memory safety

## SOFT SKILLS

- Clear communication
- Technical leadership
- Critical thinking
- Empathy
- Adaptability
- Strategic vision
- Effective delegation
- Time management
- Cross-team collaboration
- Constructive feedback

## LANGUAGES

English - Advanced

## REFERENCES

Click [here](#).