



Gianpaolo Macario

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ABOUT ME

Software architect with extensive experience in developing and integrating embedded systems for the industrial and automotive sectors. I have served as a technical reference for complex projects, collaborating with both internal and external stakeholders to achieve project objectives. My expertise includes supplier management, preparing RFQs, and responding to customer RFPs. I am committed to knowledge sharing and promoting best practices across organizations. I am eager to advance into a technical leadership role, managing R&D teams working on innovative projects with significant organizational impact.

WORK EXPERIENCE

🏢 **AROL Group S.p.A. – Canelli, Italy**

Website: www.arol.com

Senior Software Architect and Site Manager

[02/2018 – Current]

Senior software architect within the Automation and Electronics practice of AROL Group R&D department. Technical responsible for the R&D site of the AROL Group in Torino, reporting to AROL Group R&D director.

Main projects and responsibilities:

- Architected and implemented an on-premise agentic LLM system to analyze incoming customer requests and provide intelligent support to the sales team. Built on Kubernetes with Ollama as the inference engine and OpenWebUI for the user interface.
- Designed the end-to-end architecture and led a technical team through successful delivery of a BLE-based sensor node network for instrumenting capping machinery. Managed the full development lifecycle from concept to production, overseeing hardware integration, firmware development, and data pipeline implementation. Coordinated cross-functional teams to ensure timely delivery and quality standards. Technologies: Arduino (microcontroller/firmware), Docker (containerization), Node.js (backend services).
- Served as Technical Lead for the AROL R&D site in Turin, overseeing a team of ~10 professionals (employees, consultants, and university interns) across various projects. Responsibilities included task coordination, resource allocation, project planning, and ensuring alignment with organizational objectives.
- Introduced advanced software engineering processes and methodologies to enable the development and validation of a new embedded HMI and Control System for the AROL Group product line
- Managed the initial roll-out within AROL R&D of a collaborative software development environment based on Atlassian tools, then facilitated its deployment to all R&D projects acting as first level of support to the users, escalating issues and prioritizing change requests to the outsourcing supplier

Technologies: Jenkins, Yocto, Node.js, GitHub Actions, Kubernetes, Jira Software, Confluence, Bitbucket

🏢 **SOLARMA snc – Cuneo, Italy**

Website: <https://www.solarma.it/> | Business or sector: Electricity, gas, steam and air conditioning supply

Cofounder and CTO

[03/2012 – Current]

Founder and CTO of a SME specialized in the design and operation of Photovoltaic Systems. Introduced and applied innovative IoT technologies in order to minimize technicians on-site visits and improve margins.

Also providing training and consultancy services on embedded Linux and IoT technologies to enterprises working in non-competing industries.

Technologies: Arduino, AWS, Azure, Docker, GitHub Actions, Jenkins, MQTT, PlatformIO, Yocto

Mentor Graphics - Embedded Software Division – Torino, Italy

Website: www.mentor.com/embedded-software | Business or sector: Information and communication

Senior Member, Linux Services

[09/2012 – 01/2018]

I was part of a global team with operations in Europe, U.S.A., India and other geographies delivering Linux and Android professional services to the automotive and other industry sectors. Some activities performed in this role:

- Consultant and technical advisor for leading automotive OEMs and Tier-1s on both platform and product In-Vehicle Infotainment development projects based on Linux. Focusing on the global software architecture, system infrastructure and Continuous Integration/Continuous Delivery
- Lead Engineer of a Dedicated Engineering Team supporting a Tier-1 supplier in the development and maintenance of an optimized embedded Linux distribution (custom target based on Freescale i.MX6 SoC). Main focus on BSP and system startup
- As part of a number of customer services engagements, identified bottlenecks and optimized system builds of commercial Embedded Linux distributions based on Yocto
- During the pre-sales process, architect responsible for gathering customer needs and requirements, then defining the solution and coordinating the technical response up to its delivery
- Acting as technical representative of Mentor Graphics within the GENIVI Alliance, with the goal of ensuring coordination and alignment between the company product roadmap and the planned updates of the GENIVI Platform Compliance specification

GENIVI Alliance

Website: www.genivi.org | Business or sector: Professional, scientific and technical activities

System Architect

[01/2012 – 01/2018]

Representing the mother company inside the GENIVI Alliance as Lead Architect of the System Infrastructure Expert Group and Voting Member of the System Architecture Team (SAT) and the Compliance Team

Responsible for performing and coordinating several activities and projects, such as:

- Launched, contributed and acted as maintainer of a few public open source projects with a focus on: Embedded Linux, CI/CD, Android, Arduino and the Internet of Things
- Performed a comparative study of the Security architecture and the Access Control mechanisms available on GENIVI and the Android software platform
- Managed and contributed to a project to assess the performance impact when deploying Embedded Linux and Android distributions through Linux Containers or a Type-1 Hypervisor
- Managed cooperation and contribution with University postgraduates and researchers
- Submitted papers and delivered talks about embedded systems and open source during international conferences, University lectures and other public events

Magnet Marelli Electronic Systems – Venaria Reale, TO, Italy

Website: www.magnetimarelli.com | Business or sector: Manufacturing

Software Platform Leader

[06/2006 – 08/2012]

- From Jul 2008: Software Platform Leader responsible of the development and productization of a new Linux-based platform for MM infotainment systems
- From Oct 2007: System Architect and Project Lead of the team tasked of the development and integration of an A-Sample unit for the next generation of infotainment systems for a top German car maker. The product

was developed on a reference hardware design provided by a lead US Silicon Vendor, with a commercial Embedded Linux distribution and third-party middleware. MM was responsible of the application development, system integration and validation, plus the overall project management. The outstanding result of this project convinced the customer to move on to the productization phase together with MM and its project partners.

- From Jan 2007: Responsible of a joint team at Politecnico di Torino with the mission of developing innovative proof-of-concepts and prototypes of IVI systems based on Open Source Software
- From Oct 2006: Technical Leader in a joint project together with Telecom Italia to develop and deploy telematics services in the automotive space

Comau S.p.A. – Grugliasco, TO, Italy

Website: <https://www.comau.com/> | Business or sector: Manufacturing

ICT Manager

[07/2005 – 05/2006]

Due to company reorganization I was reassigned to Comau, where I became responsible of the operations and the evolutive maintenance of an enterprise application for Product Lifecycle Management within the Robotics Business Unit.

Related products and technologies: MatrixOne eMatrix, BEA WebLogic, Oracle, J2EE, XML

GlobalValue (an IBM and Fiat Company) – Torino, Italy

Business or sector: Information and communication

Senior Consultant, Wireless Solutions

[04/2002 – 06/2005]

Responsible for several activities and projects including:

- Provided training and consulting to an European automotive Tier-1 Supplier on embedded software development, Linux and Java for an innovative telematics project developed within the EU 6th Framework Programme. Specific tasks: porting and optimization of an Embedded Linux distribution to a custom target (ARM architecture), debug and adaptation of the Linux Bluetooth stack for a custom Bluetooth adapter, porting of the IBM J9 Embedded Java Virtual Machine
- Worked jointly with an international IBM team (US, Korea, France) on a global telematics project for a leading Korean car manufacturer. Developed API, reference implementation software (J2ME, SWT) and Eclipse plugins; organized the technology transfer workshop to the customer
- Prepared training material and performed a few workshops about RFID in US and Germany, assisting and mentoring on the J2ME/J2EE middleware solution developed by IBM
- Worked as technical support of GlobalValue and IBM on several opportunities involving wireless and telematics technologies. Organized technical meeting and workshops with customers, identified solution and worked on the architecture and the project sizing
- Developed a feasibility study and a pre-production pilot of a service of Mobile Office Synchronization between heterogeneous mobile devices and corporate servers via wireless networking and an infrastructure based on IBM middleware

Magneti Marelli Sistemi Elettronici – Venaria Reale, TO, Italy

System Engineer

[02/1998 – 03/2002]

- Ported Embedded Linux on custom target hardware (x86 and SH architectures)
- Designed the software architecture and led a team of developers to prototype a Java+OSGi-based in-vehicle telematics system running on production-grade hardware
- Transferred technology and knowledge to company on: Open Standards, Internet Protocols, Web, WAP, Java, and Real-Time Operating Systems

Società di Elettronica per l'Automazione (SEPA) – Torino, Italy

Design Engineer

[11/1992 – 01/1998]

- Responsible for RTOS porting and firmware design to custom hardware

EDUCATION AND TRAINING

Dottorato di Ricerca in Ingegneria Informatica e dei Sistemi

Politecnico di Torino [10/1990 – 10/1992]

City: Torino | Country: Italy | NQF Level: Admitted to third year (Italian Ph.D.)

Laurea in Ingegneria Elettronica

Politecnico di Torino [10/1985 – 12/1989]

City: Torino | Country: Italy | NQF Level: 110/110 Summa Cum Laude

Diploma di Maturita' Scientifica

Liceo Scientifico Statale "Giuseppe Peano" [10/1981 – 07/1985]

City: Cuneo | Country: Italy | NQF Level: 60/60

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C2

French

LISTENING B1 READING B2 WRITING B1

SPOKEN PRODUCTION A2 SPOKEN INTERACTION B1

German

LISTENING A2 READING A2 WRITING A1

SPOKEN PRODUCTION A1 SPOKEN INTERACTION A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Continuous integration platforms setup and maintenance (Jenkins) / Docker / Javascript / Linux / C / Microsoft Office: Word, Excel, Access, Power Point, Outlook. / Management tools (JIRA, Confluence) / Git, Github, Bitbucket / Communication Protocols: UART, I2C, SPI, Bluetooth, BLE, BLE Mesh / Microcontroller Programming: Arduino and ESP32

DRIVING LICENCE

Driving Licence: B