Luca Di Mauro

Software Engineer



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SKILLS

- Proficient in **C, C++, C#, Javascript, Python**;
- Competent in **Java, BASH, Typescript, HTML, CSS, Latex, Markdown**;
- Development skills using following platforms and frameworks: **Unix/Linux, Qt, Pyside, Avalonia, Docker, FreeRTOS, ESP-IDF, MicroPython, ROS, NodeJS, Electron, OpenLayers, REACT**;
- Expertise in **Arduino**, **Raspberry** and **ESP32** hardware platforms, their interactions with sensors and actuators, wired and wireless communication methods;
- Knowledge of E1381 and E1394 communication protocols for clinical laboratory instrumentation;
- Knowledge of main inter-process communication method, of TCP/IP, ETSI ITS network stacks and sensor networks;
- Basic knowledge of Android and Yocto Project;
- Knowledge of Linux kernel structure, build process, and customization;
- Use of agile methodologies **Scrum** and **Kanban** in development teams;
- Knowledge of **CI/CD** techniques on the GitLab platform;
- Strong team collaboration and problem-solving;

LANGUAGE SKILLS

Native language: Italian.

Language	Reading	Listening	Speaking	Interaction	Writing
English	B2	B2	B2	B2	B2

WORK EXPERIENCE

Software Specialist *-DIESSE - Diagnostica Senese S.p.A., Monteriggioni*

06/2024 - Present

Key roles

- Embedded Software Developer: Developing software for laboratory instruments and related applications;
- Project Leader: Leading the development of a desktop application for ESR exam management, including DAS-28 parameter calculation.

Key activities

- Planning, developing, and maintaining new features for laboratory instruments based on custom embedded boards;
- Developing and maintaining PC utility applications;

- Functional testing of diagnostic laboratory instruments.

Technical Product Specialist - *SECO, Siena*

09/2021 - 06/2024

Key roles

- Embedded software developer;
- Web application developer;
- Product management.

Key activities

- Applications development to complement the boards produced by the company, using C++ and Python with the related Qt and Pyside libraries;
- Web applications development based on the REACT framework and React-Bootstrap for the proprietary cloud platform CLEA;
- Technical support for the UDOO community;
- POC implementation and participation in the Embedded World 2022 and 2023 events.

Software Engineer - *Scuola Superiore Sant'Anna, Pisa*

01/2020 - 08/2021

Key roles

- Technical manager and team leader within the development group;
- Manager of the GitLab and oneM2M platforms for historicizing sensor data.

Key activities

- Creation and maintenance of a Docker image for cross-platform testing, deployment, and compilation of ETSI ITS-G5 standard stack components running on custom embedded boards;
- Creation and management of a framework, based on the OpenLayers libraries, for prototyping containerized web-based applications, used to visualize geo-referenced data from any platform compliant with the oneM2M standard. This framework was initially developed as a development activity within the European Corealis project;
- Participation in the second ETSI CV2X Plugtests (July 20-31, 2020).

Junior Researcher- *Consorzio Nazionale Interuniversitario delle Telecomunicazioni, Pisa*

02/2017- 12/2019

Key roles

- Embedded systems and IoT devies developer.

Key activities

- Implementation of the software architecture and use cases for the European Autopilot project;
- Testing and validation of the Debian OS and network interfaces on ARM-based boards;
- Development of a PID controller in C, running on an Altera FPGA to stabilize the output of a laser transmitter;
- Implementation of the security layer defined within the ETSI ITS-G5 standard stack;
- Participation in the ETSI CMS Plugtests 6 (February 25 - March 1, 2019) and 7 (November 4-8, 2019) to test the implemented security layer.

EDUCATION

M.Sc. in Computer Science - ICT Solution Architect - *University os Pisa*

09/2017 - 10/2022

Thesis project

Implementation of the SWD protocol for FreeRTOS to allow an ESP32 to control and debug an RP2040 MCU.

B.Sc. in Computer Science - *University of Pisa*

09/2011 - 12/2016

Thesis project

Developed a demonstrator using a Turtlebot robot and Tmote sensor nodes. Implemented an intruder-tracking system using Kinect and motion sensors.
Exhibited at Internet Festival 2016 in Pisa.

High School Diploma (Liceo Scientifico) - *Castel del Piano (GR), Italia*

07/2011

PUBLICATIONS

Securing vehicular computation offloading: A distributed ledger-based approach - *2021*

D. Lattuca et al., "Securing vehicular computation offloading: A distributed ledger-based approach," 2021 IEEE 94th Vehicular Technology Conference (VTC2021-Fall), Norman, OK, USA, 2021, pp. 1-6, doi: 10.1109/VTC2021-Fall52928.2021.9625368.

A Photonics-Assisted Multi-Band MIMO Radar Network for the Port of the Future - *2021*

G. Serafino et al., "A Photonics-Assisted Multi-Band MIMO Radar Network for the Port of the Future," in IEEE Journal of Selected Topics in Quantum Electronics, vol. 27, no. 6, pp. 1-13, Nov.-Dec. 2021, Art no. 6000413, doi: 10.1109/JSTQE.2021.3092880.

Securing Seaport Logistic Vehicles Using a Distributed Ledger-Based Credential Management System - *2021*

A. Tesei et al., "Securing Seaport Logistic Vehicles Using a Distributed Ledger-Based Credential Management System," in IEEE Open Journal of Vehicular Technology, vol. 2, pp. 162-179, 2021, doi: 10.1109/OJVT.2021.3067209.

IOTA-VPKI: A DLT-Based and Resource Efficient Vehicular Public Key Infrastructure - *2018*

A. Tesei, L. Di Mauro, M. Falcitelli, S. Noto and P. Pagano, "IOTA-VPKI: A DLT-Based and Resource Efficient Vehicular Public Key Infrastructure," 2018 IEEE 88th Vehicular Technology Conference (VTC-Fall), Chicago, IL, USA, 2018, pp. 1-6, doi: 10.1109/VTCFall.2018.8690769.

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