

Matteo Iervasi

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🌐 <https://jackhack96.github.io/>

in [matteo-iervasi](#)



I'm a firmware engineer with a strong background in low-level programming and microcontroller development, experienced in creating efficient and reliable firmware solutions for embedded systems and constantly seeking opportunities to apply my technical expertise to contribute to innovative and impactful projects. I'm an expert in C, C++ and Python, especially in optimizing performance and ensuring hardware compatibility and I'm also highly skilled in utilizing the Yocto Project to customize embedded Linux distributions.

Education

2018–2020 **Master's degree in Computer Science and Engineering**, *University of Verona*, Verona, 107/110

Thesis title: "Integrating synthetic and real components of a cyber-physical production system".

Relevant courses:

- Embedded systems design
- Networked embedded systems
- Physics of integrated devices
- System theory

2015–2018 **Bachelor's degree in Computer Science**, *University of Verona*, Verona, 95/110

Relevant courses:

- Operating systems
- Software engineering
- Signal and image processing
- Language and compilers

2010–2015 **High school diploma**, *Liceo Scientifico Angelo Messedaglia*, Verona, 87/100

Attended the "*Applied Science*" curriculum, which focuses on Computer Science, Physics, Chemistry and Biology.

- Developed a software for controlling the chemistry lab spectrophotometer

Master thesis

Title *Integrating synthetic and real components of a cyber-physical production system*
Supervisor Prof. Franco Fummi
Advisor Dr. Stefano Centomo

Abstract One of the key aspects of *Industry 4.0* is the concept of Digital Twins, as they are an enabling technology for things like predictive maintenance, real-time production optimization, on-demand product customization and so on... A limiting factor in the creation of *Digital Twins* is the abundance of incompatible modeling languages. Among the research and the projects that tries to overcome this issue, AutomationML is increasingly cited and used as a vendor-neutral language for model exchange. This work proposes a simple direct approach for the integration of models in CPPS systems, using AutomationML as the base technology.

Research

- 2021 **Research scholarship**, *EDALab S.r.l.*, San Giovanni Lupatoto
Integration of Bluetooth Low Energy devices in BOX-IO system.
Focus of the work was the development of a firmware for some microcontrollers (most notably Texas Instruments and ST) able to communicate over BLE, ZigBee and generic serial connection with the BOX-IO system.

Employment

- Sep 2020–
Present **Embedded software engineer**, *EDALab S.r.l.*, San Giovanni Lupatoto
General firmware and low-level embedded software development for third-parties.
 - Collaborated directly with customers to design and develop firmware solutions for various embedded systems.
 - Implemented low-level software and optimized performance while ensuring hardware compatibility.
 - Contributed to the development of real-time systems for industrial applications.At EDALab, I had the opportunity to work for over 30 projects across diverse applications. I programmed firmwares that now power HVAC plants, industrial vapor heaters, thermostats, compressors for oil extraction, and even coffee machines, along with other mixed projects that include sensor based monitoring activities. I particularly enjoyed contributing to projects improving people's lives, such as developing firmware for wearable devices powered by Espressif ESP32, leveraging my expertise in low-power microcontrollers.
- Jan 2024 **Teaching professor**, *University of Verona*, Verona
Conducted a course entitled "Firmware Development with Bluetooth Low Energy Protocol and FreeRTOS."
- Aug 2020 **Internship**, *EDALab S.r.l.*, San Giovanni Lupatoto
Integrated reliable update mechanism base on SWUpdate for BoxIO.
- Dec 2019 **Internship**, *University of Verona*, Verona
Developed an operating system image for classrooms' displays based on Raspberry Pi.
- Jan 2017–
Mar 2018 **Internship**, *Sordato S.r.l.*, Monteforte d'Alpone
Developed software for controlling an array of automated wine fermentation machines.
- 2017–2018 **Teacher assistant**, *University of Verona*, Verona
I worked as a teacher assistant in the following courses:
 - Operative systems
 - Programming I
 - Programming II

Volunteering

2017– **Technician**, AVIS, Vigasio
Present I volunteered as a technician and general assistance at the local AVIS association, an Italian organization that promotes blood donation.

Languages

Italian Native language
English Professional level. Proficient in reading and writing, fluent in speaking. *B2*

Skills

Programming Languages Excellent knowledge of C, C++ and Python.
Firmware Development Expertise in low-level programming for various microcontrollers with various environments and compilers, e.g. IAR®, GCC/Clang and Keil®.
MCUs Expertise in developing for ST® STM32, Renesas® RL78, Renesas® RX130, Renesas® RA, NXP® Kinetis, Cypress® FM4 and other ARM MCUs, Microchip® PIC18, PIC24 and PIC32, Intel® 8051 and Espressif® ESP32/ESP8266.
Embedded Systems Experienced using the Yocto Project for customizing embedded Linux distributions, Qt/QML for developing complex HMIs.
Operating Systems Proficient in developing on GNU/Linux and Microsoft® Windows®.
Scripting Expert in OS automation using Bash and general automation using Python.
Versioning Excellent knowledge of Git.

Interests

Electronics I like studying electronics and then putting it into practice, from circuit design to PCB printing.
3D printing I'm into 3D printing and I enjoy designing things in CAD that then I use in my projects.
DIY I love to repair home appliances, furnitures and fixing broken computers.