Francesco CASTAGNOTTO

Senior Embedded Linux Platform Engineer

Embedded Linux and open source engineer with experience in Yocto-based BSP development, Linux platform integration, ARM bring-up, and embedded system lifecycle management.

Worked across industrial, automotive, and IoT environments, contributing to the full embedded Linux lifecycle from hardware integration and platform customization to production deployment and long-term maintenance.

Company-wide technical reference for open source technologies, development tooling, and software engineering workflows, supporting multiple teams in the evaluation, adoption, and integration of open source solutions.
Strong focus on system reliability, maintainability, automation, and engineering scalability in complex hardware/software environments.

CORE SKILLS

Embedded Linux • Yocto Project • BSP Development • Linux Kernel Customization • ARM Bring-up • Device Tree • U-Boot • System Integration • Production Automation • Embedded Debugging • Docker / LXC • Git / GitLab • Open Source Tooling • Software Maintainability • Linux Platform Engineering

WORK EXPERIENCE

PRIMA ELECTRO SpA

Open Source Tech Lead (2022 – Present)

Company-wide reference for the evaluation, adoption, and integration of open source technologies, development tooling, and engineering workflows across multiple teams.
Coordinator for Cyber Resilience Act (CRA) related activities across embedded, firmware-based, and Windows-based products, contributing to software lifecycle management, vulnerability monitoring, maintainability processes, and technology assessment activities.
Supported engineering teams on Git/GitLab workflows, compilers, toolchains, development infrastructure, and open source technology adoption.

Embedded Linux Product Engineer (2021- Present)

Design and maintenance of Yocto-based embedded Linux systems for industrial ARM platforms, including BSP integration, production deployment, and system debugging.

Main activities:

- Development and maintenance of embedded Linux BSPs based on Yocto
- Linux kernel, device tree, and bootloader customization
- Hardware/software integration on ARM-based systems
- In-field debugging and production support

Key projects and contributions:

- Designed and maintained Yocto-based industrial Linux platforms including OS architecture, bootloader configuration, and system integration
- Developed automated manufacturing workflows for flashing bootloader, e-fuses, and OS images
- Improved production reliability through automated validation and deployment procedures
- Managed RPM-based release and update workflows for embedded systems
- Performed root-cause analysis of field issues on deployed systems
- Supported customer deployments involving Docker, certificates, and remote debugging infrastructure

S.A.E.T. Srl

Embedded Linux Product Engineer (2019 – 2021)

Development of embedded Linux systems for ARM-based industrial and in-vehicle platforms using Yocto.
Main activities:

- Yocto BSP development and Linux platform integration
- Linux kernel, device tree, and bootloader customization
- Hardware bring-up and production support
- Production workflow automation and deployment tooling

Key projects and contributions:

- Designed and maintained embedded Linux platforms for industrial ARM-based products
- Built complete Yocto-based systems including touchscreen integration, Qt environment, and remote debugging support
- Developed automated manufacturing procedures for flashing bootloader, e-fuses, and OS images
- Performed hardware integration and troubleshooting activities during bring-up and validation phases

Domotica Labs Srl

Embedded Linux & BSP Specialist / Embedded Software Engineer (2016 – 2018)

Development and maintenance of ARM-based Linux systems for IoT and domotics products.
Main activities:

- Linux distribution customization
- Kernel and bootloader configuration
- Remote access infrastructure

Key projects and contributions:

- Developed customized ARM Linux distributions with automatic hardware and peripheral detection
- Built services for automatic target configuration and backward compatibility across multiple hardware revisions
- Debugged peripheral drivers and identified hardware integration issues through schematics analysis
- Developed remote access infrastructure for field devices using web and terminal-based solutions
- Automated OS flashing and production-line validation workflows

Marelli SpA

Embedded Software Engineer (2014 – 2016)

Development and validation of automotive infotainment and navigation systems.

- Navigation software integration and sensor validation activities
- Real-world testing, stress validation, and debugging on automotive platforms
- Contributed to infotainment system integration activities for Alfa Romeo vehicles

OPEN SOURCE & COMMUNITY

- Host of the "**I use Yocto btw**" podcast covering embedded Linux and open source technologies
- Author of a technical blog focused on embedded Linux and Yocto-related topics fcastagnotto.wordpress.com
- Strong interest in Linux internals, open source ecosystems, and upstream-oriented development

EDUCATION

Polytechnic university of Turin

2013 – MSc in Computer Engineering

2011 – BSc in Computer Engineering

LANGUAGES

Italian native

English professional working proficiency

CONTACT

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