Luca Padovan

Senior Software Engineer · Platform, Linux and Embedded Systems

Bologna, Italy · EU citizen · Open to remote (EMEA) · lucapadovan.dev
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SUMMARY

Senior software engineer with 7+ years shipping production software on Linux, from C/C++ on ARM SoCs to Go services and the platforms underneath them. Currently the senior engineer responsible for the Yocto based embedded Linux platform at QubicaAMF, defining implementation strategy for OTA updates, recovery, CI/CD and observability on systems running on 100,000+ bowling lanes in 7,000+ centers. Builds open source Linux tooling in Go (260+ GitHub stars), including a hawkBit compatible OTA server load tested at 10,000 devices.

SKILLS

Languages	Go, C, C++, C#, Python, Bash, JavaScript
Embedded Linux	Yocto Project, Linux kernel, U-Boot, Secure Boot, BusyBox, systemd, cgroups, ARM SoCs, shared sstate cache, distributed builds (icecc)
Graphics	X11, Wayland, Mesa, Vulkan, NVIDIA GPU drivers, HDMI
OTA & delivery	SWUpdate, Mender, Eclipse hawkBit, staged rollouts, CI/CD, Git, GitFlow, GitHub Actions, GoReleaser
Cloud & backend	Docker, Kubernetes, Microsoft Azure, OpenStack, .NET, REST APIs, SignalR, PostgreSQL, SQL, MongoDB
Observability	Prometheus, OpenTelemetry, ELK Stack, FinOps
Packaging	Debian/Ubuntu (.deb, APT), Snap, Flatpak

EXPERIENCE

QubicaAMF · Bologna, Italy

Platform & Senior Software Engineer — Feb 2024 to Present

- Senior engineer responsible for the embedded Linux platform behind QubicaAMF bowling and entertainment systems, running on 100,000+ lanes in 7,000+ bowling centers; define implementation strategy from Yocto image customization, U-Boot and Secure Boot to system integration to recovery, logging and monitoring.
- Own the Linux graphics stack in Yocto for the Unity based applications running on the devices: X11 and Wayland, Mesa and Vulkan, and NVIDIA GPU driver integration, with AMD GPU support now in planning.
- Drove the OTA update strategy for the device fleet: built a Mender proof of concept, evaluated it against alternatives, and now implementing SWUpdate.
- Built the Yocto CI/CD pipeline from scratch where none existed: reproducible builds, a shared sstate cache for everyday builds, distributed compilation through icecream (icecc) for clean release builds on master, and local source mirrors shared over NFS so builds never fetch from the internet.
- Run the supporting infrastructure with containers, orchestration and observability, and reduced its costs by applying FinOps practices.
- Coordinate external consultant engagements in my area, from scoping to delivery, keeping their work aligned with the platform architecture.

Senior Software Engineer — May 2023 to Feb 2024

- Developed embedded Linux applications and software infrastructure for entertainment systems, including system customization and operational services.

HiFuture (Teoresi Group) · Italy
Software Engineer — Jul 2021 to May 2023

- Delivered C# (WinForms, WPF) human machine interfaces for biomedical and microelectronics equipment.
- Authored software requirements specifications and test plans for customer projects.

T3LAB · Bologna, Italy
Software & Firmware Engineer — Apr 2019 to Jul 2021

- Developed, deployed and functionally tested C/C++ applications on ARM multicore SoCs running embedded Linux.
- Built the open source cloud infrastructure for the SBDIO Industry 4.0 research project, deploying OpenStack (PackStack) and Kubernetes with federated authentication and ELK based logging.

Datalogic · Bologna, Italy
Software Engineering Intern — Oct 2018 to Mar 2019

- Researched machine learning platforms for mobile computing devices as the subject of my master's thesis.

OPEN SOURCE

portop · Go — 220+ stars

- htop style terminal UI that maps every Linux socket to its process, systemd unit and Docker container by reading /proc and cgroups, with no D-Bus or Docker SDK dependency.
- Baseline drift detection for cron jobs and systemd timers, JSON output for scripting, plus a web dashboard and Cockpit integration.
- Released as .deb packages and binaries through GoReleaser and GitHub Actions, with an install script that verifies checksums.

qawk · Go, PostgreSQL · OTA update server for device fleets

- Implements the full Eclipse hawkBit 1.1.0 API (16 device and 153 management operations), checked by contract tests replayed against a real hawkBit server.
- Adds release channels with promotion gates and approvals, staged rollout waves that halt on error thresholds, and orchestrated updates that roll back a whole multi device system when one component fails.
- Ships Prometheus metrics, OpenTelemetry tracing, mutual TLS and Kubernetes manifests; load tested at 10,000 devices polling every 30 s with 333 requests/s and 2 ms p99.

pkgtui · Go

- One terminal UI to search, install, remove and upgrade packages across APT, Snap, Flatpak, Homebrew and MacPorts.

Aurora OS · Debian based distribution

- Developer focused Debian distribution with a custom desktop, system snapshots and built in development tooling.

EDUCATION

- **MSc, Computer and Automation Engineering**
  University of Ferrara · 2016 to 2018
- **BSc, Computer and Electronic Engineering**
  University of Ferrara · 2012 to 2016

LANGUAGES

Italian (native) · English (B2)

CERTIFICATIONS AND TRAINING

- LFD450 Embedded Linux Development, The Linux Foundation
- PCAP, Certified Associate in Python Programming
- CPA, C++ Certified Associate Programmer
- Embedded Linux and Yocto Project course