Francesco Montorsi

WORK EXPERIENCE

Equinix Redwood City, CA, United States

Department Edge Infrastructure Services | **Website** https://www.equinix.com/

Software engineer

1 Apr 2024 – Current
- Architectural design and development of distributed microservices deployed at global scale on Kubernetes.
- Network design and hands-on configuration of TOR switches from vendors like Arista, Cisco, Nokia, ArcOS.
- Development of cloud-native Golang services providing: a) Real-time network telemetry ingestion using gNMI, with custom pipelines for filtering, modeling and aggregation. b) Automated configuration deployment on ToR switches. c) On-switch agent to expose inter-VRF servers (using Linux network namespaces). d) Declarative APIs and reconciliation frameworks enabling drift detection and automated network convergence.
- Daily work with Prometheus, OpenTelemetry, Grafana, ArgoCD, Redis, PostgreSQL, etc etc (all deployed in Kubernetes)
- Keywords: Golang, gRPC, YANG, gNMI, Cisco, Arista, Nokia Network Operating Systems, Helm, Kubernetes
- Full DevOps ownership including deployment, monitoring and on-call rotation to ensure 24/7 reliability.

Infovista Modena, Italy

Software architect

2023 – Mar 2024
- In 2023 I was promoted to Software Architect and I worked with Product Management teams, Professional Support department to define next-generation architecture and evolve the stability, scalability and performances of the Infovista mainline product.
- Although coding is in my DNA, in this role my contribution to the implementation phase was reduced and I spent a larger share of my time to connect with other teams and oversee the overall design of the software solution.
- In 2024 I went back to coding by starting and leading an eBPF-based new product designed to provide innovate "tapping/port-mirror" capabilities for Kubernetes clusters and 5G networks, using C++ and Go.

Technical Leader

2019 – 2023
- Since 2019 I led, in the position of Technical Leader, a team composed up to 15 developers to transition the company products into cloud-native architectures, using technologies like Kubernetes, Helm, Istio and breaking up the monolithic C++ products into smaller, elastic services.
- In Dec 2022 I obtained the certification of Kubernetes Application Developer (CKAD) from CNCF

Software engineer

2014 – 2019
- In 2014 I started with the development of C++ Linux-based, high-throughput (up to 80 Gbit/s), multi-core (up to 72 cores) systems for probing and real-time analysis of core network traffic for mobile service providers, with particular emphasis on aspects like: kernel drivers for fast data transfer and filtering, custom hardware integration (e.g., cross-building for Tilera massive multicore CPU), protocol analysis, data persistence, fast data indexing and retrieval.
- Since 2016 I worked on the NFV transformation and bring zero-touch automation of the whole packet processing service chain, integrating

PUB/SUB decoupling, Docker&LXC deployments, Software-Defined-Networking (SDN) concepts, etc.

Embit srl Modena, Italy

Embedded system designer

2013 – 2014

- Development of embedded Linux systems for data acquisition and low-power wireless sensor networks.
- Worked with BLE, ZigBee, IEEE 802.15.4, Wi-Fi and multiple microcontroller platforms.

EDUCATION AND TRAINING

1 JAN 2010 – 31 DEC 2012 Modena, Italy

PhD in Information and Communication Technologies (ICT) University of Modena and Reggio Emilia, ICT Doctorate School

During the PhD I spent 7 months (from Jan. 2011 till July 2011) at the Wireless Communication and Network Sciences Laboratory at **Massachusetts Institute of Technology** (MIT), Cambridge, MA, USA in quality of *PhD Visiting Student*.

Website https://www.ict.unimore.it/ | **Field of study** Engineering, manufacturing and construction | **Thesis** Localization and Tracking for Indoor Environments

Master and Bachelor in Electrical Engineering University of Modena and Reggio Emilia

Website https://www.ingmo.unimore.it/it | **Final grade** Cum Laude | **Thesis** Development and implementation of a wideband digital modem

LANGUAGE SKILLS

MOTHER TONGUE(S): Italian

Other language(s):

English

Listening C2	
Spoken production C2	
Reading C2	
Spoken interaction C2	
Writing C2	

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

SKILLS

Golang | C/C++ | Python | Rust | Lua | Kubernetes | Helm | CI/CD: GitLab, Jenkins, ArgoCD | AWS | OpenStack | qE MU/KVM | BGP | EVPN-VXLAN | Cisco | gNMI | NFV | SDN | DPDK | eBPF | Apache Kafka | NATS | Git | Ansible | Lin ux

CERTIFICATIONS

Cloud Native Computing Foundation (CNCF), **DEC 2022**

Certified Kubernetes Application Developer (CKAD)

Write here the description...

Google Inc., **2007**

Software design competition "Google Summer of Code"

The software coding projects were "XTI Metadata Completion" (in 2007, supervised by Dr. Stefan Cmosor) and "wxWidgets components package manager" (in 2006, supervised by Dr. Julian Smart), both for the open-source software library wxWidgets (www.wxwidgets.org).

HONOURS AND AWARDS

2014

Certificate of Merit for Marked Contributions to National and International Scientific Research

2007

Annual GTTI Award for PhD Theses in the field of Communication Technologies

HOBBIES AND INTERESTS

Open Source projects

Maker, Tinkerer, HomeAssistant fan and Open Source enthusiast.

Since high-school (roughly around 2000) I have been collaborating on several Open Source projects contributing code and ideas. The list of projects I took part in is very long, see https://f18m.github.io/ ; I'm still very active in a number of projects.

These days I mostly enjoy writing software (addons, integrations) for HomeAssistant and ESPHome, designing both the electronics and the software of what I install in my house.

PROJECTS

VOIP client

An Home Assistant addon that integrates a VOIP client, to initiate outgoing calls or receive incoming calls.
I use this in my own implementation of my house alarm system, to deliver critical notifications to my phone with Text-to-Speech.

Link https://github.com/f18m/ha-addon-voip-client

PSMQTT

Utility reporting Hardware and Software system health and status via MQTT. This project is so useful to implement low-effort realtime monitoring of any Linux system you deploy, similar to commercial solutions like NetData, Datadog, etc.

Link https://github.com/eschava/psmqtt/

DHCP Server with realtime metrics and built-in observability

An Home Assistant addon that runs dnsmasq both as DHCP server and DNS server. This project allows you to take back the control of your home network!

Link https://github.com/f18m/ha-addon-dnsmasq-dhcp