





Mauricio Vásquez Bernal

Software Engineer
Kinvolk

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Languages

Spanish ● ● ● ● ●
Italian ● ● ● ● ●
English ● ● ● ● ●

Skills

Programming Languages

C ● ● ● ● ●
C++ ● ● ● ● ●
Go ● ● ● ● ●
Python ● ● ● ● ●
Java ● ● ● ● ●

Computer Networks

eBPF and XDP ● ● ● ● ●
TCP/IP ● ● ● ● ●
SDN and NFV ● ● ● ● ●

Virtualization

KVM/QEMU ● ● ● ● ●
Open vSwitch ● ● ● ● ●
Docker & LXC ● ● ● ● ●
Kubernetes ● ● ● ● ●
OpenStack ● ● ● ● ●

Software Development

Git ● ● ● ● ●
Open Source ● ● ● ● ●
GDB ● ● ● ● ●

Soft Skills

Problem Solving ● ● ● ● ●
Self-Motivation ● ● ● ● ●
Communication ● ● ● ● ●
Teamwork ● ● ● ● ●

Profile

Young software engineer with 3+ years of experience in software development. I am a proactive team member, very motivated and enthusiast about new life challenges. I work as a software engineer at Kinvolk. I have experience in open source development, I have contributed to different projects like Linux kernel, BPF Compiler Collection (BCC), Open vSwitch (OVS), Data Plane Development Kit (DPDK).

Experience

Jul 2018 – Present **Software Engineer** Kinvolk
● Contributing to OpenTelemetry, a distributed tracing framework.
● Contributing to Lokomotive, the Kinvolk's Kubernetes distribution.

Feb 2016 – Jul 2018 **Research Assistant** Polytechnic University of Turin
● Developing of polycube, an open source framework to build fast and lightweight virtual network functions with eBPF.
● Developing of high-performance virtual network functions with eBPF and XDP.
● Contributing to open source projects like Linux kernel and BCC.

Feb 2017 – May 2017 **Consultant** Nebbiolo Technologies
● Implementing high performant virtual network functions with eBPF.

Sep 2016 – Jan 2017 **Consultant** Plumgrid (Acquired by VMware)
● Developing iovisor-ovn, an eBPF datapath for Open Virtual Networking (OVN).

Jan 2015 – Aug 2016 **Research Assistant** Polytechnic University of Turin
● Developing of a high-performance communication channel for inter-VM communication in Open vSwitch.
● Contributing to open source projects like Open vSwitch (OVS) and Data Plane Development Kit (DPDK).

Education

2013 – 2015 Master in Computer Engineering Polytechnic University of Turin
2009 – 2013 Bachelor in Electronic Engineering University of Antioquia

Projects

Polycube github.com/polycube-network/polycube
Polycube is an open source framework for developing fast and lightweight network functions using eBPF and XDP.

IOVisor-ovn github.com/iovisor/iovisor-ovn
IOVisor-ovn is an eBPF based datapath for the Open Virtual Networking project. It provides a virtual networking solution for virtual machines in environments like Open Stack.

Squadra Corse Polito facebook.com/pg/SCPolino
Squadra Corse is a student racing team that each year designs, builds and tests an electric car. I was in charge of developing the telemetry and data-logging systems.

Publications

Jun 2018 **Creating Complex Network Services with eBPF: Experience and Lessons Learned**

Oct 2018 **Transparent Optimization of Inter-Virtual Network Function Communication in Open vSwitch**
CloudNet

Aug 2016 **A Transparent Highway for inter-Virtual Network Function Communication with Open vSwitch**
SIGCOMM

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