





Mauricio Vásquez Bernal

Software Engineer
Research Assistant
Polytechnic University of Turin

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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 am one of the main developers of Polycube, an open source framework for developing virtual network functions with eBPF and XDP. I have experience in open source development, I have contributed to different projects like Linux kernel, BPF Compiler Collection (BCC), Open vSwitch (OVS) and Data Plane Development Kit (DPDK).

Experience

Feb 2016 – Present **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)
● Participating in the Unify European Project

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 from Polytechnic University of Turin. Each year the team design, build and test an electric car to compete against teams from other universities all around the world. I was in charge of developing the telemetry and datalogging systems.

Publications

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