MAURICIO VÁSQUEZ BERNAL

Computer Networks Engineer
Research Assistant at Polytechnic University of Turin
Birthdate: August 31, 1991 - Nationality: Colombian
mauriciovasquezbernal@gmail.com - https://mauriciovasquezbernal.github.io

Profile

Young computer network engineer with 3+ years of experience in developing software. I am a proactive team member, very motivated and enthusiast about new life challenges. I am used to work remotely, had done it for about 2 and a half years.

I am one of the main developers of Polycube, an open source framework for developing virtual network functions with eBPF and XDP. I play nicely with 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

Research Assistant   *Feb 2016 – Present*
Polytechnic University of Turin   *Medellin, Colombia (Remote)*
- 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

Consultant   *Feb 2017 - May 2017*
Nebbiolo Technologies   *Medellin, Colombia (Remote)*
- Implementing high performant virtual network functions with eBPF

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

Research Assistant   *Jan 2015 - Aug 2016*
Polytechnic University of Turin   *Turin, Italy*
- Developing of a high-performance communication channel for inter-VM communication in Open vSwitch
- Contributing to open source projects like Open vSwitch (OvS) and Dataplane Development Kit (DPDK)
- Participating in the Unify European Project

Education

Master of Science in Computer Engineering   *Oct 2013 – Dec 2015*
Polytechnic University of Turin   *Turin, Italy*

Bachelor in Electronic Engineering   *Mar 2009 – Sep 2013*
University of Antioquia   *Medellín, Colombia*

Skills

Programming Languages	Excellent knowledge of C, good knowledge C++ and Go, basic knowledge of Java, Python
Computer Networks	Good knowledge of TCP/IP, SDN and NFV, eBPF and XDP, Wireless and LAN technologies, Routing Protocols (interior and exterior).
Virtualization	Good knowledge of KVM/QEMU, Open vSwitch, Docker and Linux Containers, and Kubernetes. Basic knowledge of OpenStack
Software Development	Good knowledge of git and debugging systems, experience on open source development
Operating Systems	Good knowledge of Linux
Languages	Spanish Native Speaker, Advanced (C1) English and Italian

Publications

Creating Complex Network Services with eBPF: Experience and Lessons Learned	HPSR
Miano, Sebastiano; Bertrone, Matteo; Risso, Fulvio; Tumolo, Massimo; Vasquez Bernal, Mauricio	Jun 2018
	Bucarest - Romania
Transparent Optimization of Inter-Virtual Network Function Communication in Open vSwitch	CloudNet
	Oct 2016
Vasquez Bernal, Mauricio; Cerrato, Ivano; Risso, Fulvio; Verbeiren, David	Pisa - Italy
A Transparent Highway for inter-Virtual Network Function Communication with Open vSwitch	SIGCOMM
	Aug 2016
Vasquez Bernal, Mauricio; Cerrato, Ivano; Risso, Fulvio; Verbeiren, David	Florianopolis - Brazil

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/SCPolito
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.	

Personal Interests

- Besides job-related things my major hobby is the cycling, I ride both mountain and road disciplines. In the last years I have been training hard and participating in different races here in Colombia.