Eder Leao Moosmann

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Education

Queen Mary University of London — London, UK
PhD. Computer Science- thesis in the area of Computer networks — *Dec. 2016 – Oct 2020*

Universidade de Campinas — Campinas, BR
Msc. Electrical Engineering- dissertation in the are of Computer Networks — *Jul. 2014 – Mar 2015*

Universidade de Sao Paulo — Sao Paulo, BR
Bsc. Computer Science — *Feb 2007 – Dec 2011*

Experience

Cloud Software Developer — Jan 2021 – Present
Platform.sh — *Remote, Germany*

- Improved pipelines and automation for Continuous Integration (CI) on Gitlab. I worked with YAML, Gitlab CI configuration, Python, bash and Go.
- Implemented pipeline health monitoring using Python, Influxdb and Grafana
- Implemented an emulator for testing the components of the company's edge layer solution using Python, Mininet, Go and GoBGP.
- Created Debian packages for software running in the service and application containers and on their release process.
- Enabled authentication for the Elasticsearch service running on containers using Nginx and Python.
- Worked on the port of a large code base from Python 2 to Python 3.
- Performed code reviews and wrote documentation for complex software

Research Developer — June 2015 – Dec 2020
Queen Mary University of London — *London, UK*

- Developed a fast network simulator for OpenFlow and routing protocols (BGP, OSPF) using C, Cython, Quagga and Linux network namespaces
- Developed network applications to scale SDN for large Internet Exchange Points using Python, Shell script, Flask, InfluxDB, Grafana and MongoDB
- Built and configured network testbeds with switches, Linux servers and Docker containers
- Worked on NS3 and Mininet simulations of data center solution to reduce congestion. I have played with DCTCP, BGP, Python and C++
- Performed Internet measurements, data analysis and visualization of DNS, Netflow and BGP records using Python (numpy, matplotlib, scypy, networkx) Java and C

Research Developer — Mar. 2014 – Feb. 2015
Lenovo — *Campinas, BR*

- Created, built and documented an open source version of a proprietary Operating System for storage devices (Unfortunately it was never released.)

Research Developer — Jan 2012 – Feb 2014
Centro de Pesquisas e Telecomunicaçoes (CPQD) — *Campinas, BR*

- Created and configured network testbeds with switches, FPGA devices and Linux servers
- Built an application to enable an OpenFlow switch to work like traditional layer 2 equipment in GPON networks using C++ and Open vSwitch
- Implemented and tested the specification of SDN network protocols using C and Python.
- Contributed to the development of routing software for SDN networks by integrating Open vSwitch to the architecture

Open Source Projects

Basic OpenFlow Software Switch | *C, C++, Python, OpenWrt, git, gdb, valgrind, callgrind* 2012 – 2020

- Implemented the specification of the OpenFlow 1.2 and 1.3 protocols
- Implemented new test cases in Python for OFtest
- Ported the code and created the configuration to run the switch in OpenWrt routers

Libfluid | *C++, Java, Python, git, gdb, valgrind* 2013 – 2015

- Built the API to convert OpenFlow to and from network format using C++ and created tests with Googletest
- Built and tested Python and Java bindings for a C++ library
- Won a competition as the best software for an OpenFlow driver in 2014

Technologies experienced

Languages: Python, C/C++, Go, Java
Computer Networks: TCP/IP, SDN, OpenFlow, GRE, Routing, Linux Networking, virtual networking (OvS)
Databases: MySQL, Redis, MongoDB, InfluxDB
Tools: Grafana, Git, RabbitMQ, LXC, Docker, Vagrant, Gitlab CI, gdb, valgrind
Libraries: NumPy, Matplotlib, ScyPy, networkx, scapy

Speaks

Native Portuguese, Fluent English, Basic German