Curriculum Vitæ et Studiorum

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Linux Developer, DevOps and Automation Engineer
Cloud, Web, Data Science and Machine Learning passionate

Name	Davide Madrisan
Email address	davide.madrisan@gmail.com
Citizenship	European Union/Italy
Usual Residence	Nice, France
LinkedIn Profile	`https://www.linkedin.com/in/madrisan`
GitHub Public Repositories	`https://github.com/madrisan`
Personal Website	`https://madrisan.com`
Online version of this Curriculum Vitæ	`https://github.com/madrisan/cv`

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Starting with degrees in Applied Mathematics and a Bachelor in Music Performance and Composition and then moving on into Cisco WAN Networking and Network Security, Linux System Development and Administration, Nagios/Centreon Monitoring, Linux Embedded System, Full Stack Web Development, and Linux DevOps technologies, I think I have a wealth of background knowledge, maturity, and ability to learn to bring to any new challenge or opportunity.

Areas of Interest

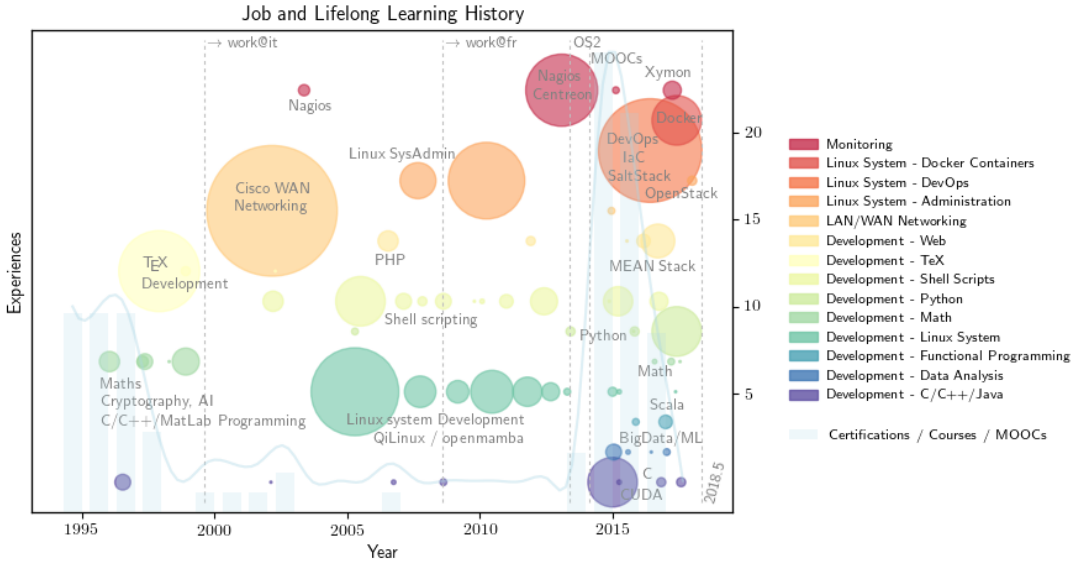
I'm currently busy playing with SaltStack, Docker, Go, OpenStack, cloud technologies, and improving my knowledge in functional programming, but my interests in technology and maths fields cover the following areas:

- Maths, currently digging around Complex and Dynamic Systems, Chaos Theory, Fractals, Scaling, and Renormalization from a complex systems point of view;
- DevOps, Docker containers, Infrastructure & Configuration as Code Technologies;
- Cloud Computing Technologies, Microservices Architectures;
- Functional, concurrent, and Web programming (in Python, Go, and Scala);
- Full Stack Web Development: Angular, JavaScript/TypeScript, Node.js, MongoDB;
- Linux and Embedded Linux Systems;
- (Big) Data Analysis and Technologies (R, Spark, Hadoop, ...), Machine Learning;
- Distributed Systems and GPGPU Programming (CUDA C++ programming in particular).

See below the list of the ∼60 MOOCs I've completed so far.

EXPERIENCES

An annotated scatter plot that should help visualizing my job and programming activities.



September 2017 – current **Infra Data and IT DevOps @ Qwant**

Infra Data and IT Lead DevOps at Qwant (`http://www.qwant.com`), the French startup company that develops the eponymous web search engine that respects the users' privacy.

Summary of my tasks

Software-define *everything* with SaltStack: from infrastructure to software integration, deployment, and testing. Develop some Salt state modules and libraries for a better integration of GitLab CI and HashiCorp Vault HA (with HashiCorp Consul and Apache ZooKeeper as secure storage backends). Code the deployment of web services, databases, Debian apt repositories, and the software projects developed by the Qwant developers.

Technologies

Docker/Docker Compose, Git/GitLab/GitLab Runner, HAProxy, HashiCorp Vault and Consul, Jenkins, MariaDB, NGiNX, Phusion Passenger, SaltStack, Swarm, Unbound, uWSGI, ZooKeeper; Golang, Python languages; CentOS and Debian Linux.

April 2013 – current **OS$_2$–Open Source Solutions (micro-entreprise)**

In parallel of my current job, I have decided to develop an additional professional activity as Auto Entrepreneur, mainly focused on Open Source and Linux–based (new) technologies:

- Web development (JavaScript/JQuery, MEAN Stack, Web Sites);
- Linux Embedded system, multimedia, Python and web development on RaspberryPi;
- LAN networking design and setup (Cisco, DELL, Synology NAS);
- Web services based on AWS Cloud Technologies.

July 2014 – August 2017 **Senior DevOps and Linux Engineer at Sopra Steria**

I joined Sopra Steria group as a L3 consulting Linux administrator and DevOps on several Red Hat based new projects.

Summary of my tasks

- Lead the switch to SaltStack as primary tool for IT automation and Linux system configuration management;
- Build, validate and improve High Availability solutions, for hosting web applications and Oracle databases, by using the Red Hat cluster suite n (cman, pacemaker/corosync);
- Develop an open source framework (back–end in Python and JSON, front–end in Bootstrap and AngularJS) for ensuring the quality of the build process and report a list of deviations from the company policies (`https://github.com/madrisan/pyoocs`);
- Develop some scripts for building and packaging the infrastructure software (hosted on a private GitLab) into dynamically created Docker containers, one per supported platform;
- Build from scratch an IT automation solution for managing the infra and customers' servers configurations using SaltStack;
- Develop a Python inventory tool for Linux using SaltStack as backend;
- Improve the Xymon monitoring by developing new checks and fixing the existing ones.

Technologies

- Linux RHEL/CentOS, Linux Debian, RedHat Cluster Suite, Spacewalk, Docker containers, AWS services, VMWare;
- Travis CI, Jenkins CI, Git/GitHub/GitLab, SaltStack;
- Shell and Python scripting languages, RWD (Bootstrap, CSS3, HTML5, AngularJS).

October 2011 – June 2014 Monitoring Architect and Team Leader at IBM

L3 Nagios and Centreon administrator and developer. Technical Leader of the Nagios monitoring team (France and Poland). Focal point of the monitoring technologies based on open source solutions and software.

This work at IBM France has given me the opportunity to setup new solutions for monitoring operating systems, databases, applications, and network appliances by using a wide range of opensource technologies.

Summary of my tasks as a L3 Nagios and Centreon team leader

- New project management (architecture, transition, planning, realization, and support);
- Design, implement, validate, and document new monitoring solutions, by cooperating with architects, managers, system, database, and application administrators;
- Develop shell and Python scripts and C programs (mainly Linux system level programs);
- Create rpm packages and administer the yum repositories containing the monitoring and system software (250+ source rpm packages and 2000 packages created from scratch);
- Improve the security of the core and Nagios servers, apache services and applications;
- Administer all the monitoring configuration (5k+ hosts; 60k+ monitored services).

Technologies

- Operating Systems: AIX, HP-UX, Linux, Solaris, VMware ESX/ESXi, Windows;
- Databases: DB2, MySQL, MS SQL, Oracle, PostgreSQL;
- Network and IT security appliances: Linux, Cisco, BalaBit Log Management, QRadar;
- Development languages: bash, C, Perl, Python, HTPL, and PHP.

Open Source development

Open source extensions to the Nagios Plugins official software for monitoring Linux servers. Porting of some of these plugins to other Unixes (AIX, FreeBSD, OpenBSD, Solaris, SunOS openindiana). Source code: `https://github.com/madrisan/nagios-plugins-linux`.

November 2008 – September 2011 Linux System Administrator at IBM

Senior Linux system adminitrator and Nagios/Centreon Monitoring expert.

During my work at IBM SSO in France, I was assigned on multiple client Linux support. My experiences at IBM helped me to add management, compliance and process skills to my profile.

Summary of my tasks as a L3 Linux System Administrator

- Changes and incidents management using ITIL tools and methods;
- Linux level 3 support to client and internal teams;
- ITIL and GDF environment;
- On-call duty (nights and weekends);
- Development of yum repositories containing all the sofware written by the team and myself.

Volunteer member of the IBM Center of Excellence Linux, working on solutions of standardization and validation of new technologies for Linux inside IBM France and for improving the quality of the delivery.

Technologies

- RHEL (Red Hat Enterprise Linux) 2–6 – physical and virtual servers (VMWare, HyperV);
- Red Hat and Linux HA (heartbeat and DRBD) clusters;
- SLES (SuSE Linux Enterprise Server) 10 and 11;
- IBM servers and IBM blades; Boot On San;
- VMware ESX management;
- Yum and RPM packaging;
- Bash, Python, PHP, and C development languages.

July 2008 – Octobre 2008 C/C++ development on Linux mobile at OpenPlug

Porting of several MSDN library functions and win32 code, libraries and tools developed under Microsoft Visual C/C++, to the Moblin environment, an open source Linux-based operating system and application stack for Mobile Internet Devices, netbooks, nettops and embedded devices.

Technologies

- Ubuntu Linux;
- GNU gcc compiler, linker, and GNU autotools; SVN repositories;
- Development languages: Shell scripting, C and C++.

January 2007 – May 2008 Linux and VMware Certified Engineer at IBM Turin

Senior Linux system adminitrator and VMware certified engineer.

Summary of my tasks

- Definition of a procedure for the disaster recovery (rebuild of remote servers from scratch, by using a Tivoli backup and a clonezilla iso image booted via an RSA interface);
- Move hundreds of of physical servers and virtualized server images from the Turin datacenter to IBM Milan ones;
- Install, configure and manage a hundred production servers;
- Install vendor patches and implement the IBM security policies;

- Fix the problems of "local triangulation" between frontend and backend servers when using a Radware's load balancing solution;
- Install, configure, and manage several VMware ESX servers (version 3.0.x);
- Development of some shell scripts for creating the servers utilization reports (application log analysis).

Technologies

- RHEL (Red Hat Enterprise Linux) AS/ES 3/4, SuSE SLES 10; Clonezilla;
- IBM TSM;
- VMware Environment.

September 2003 – December 2006 Linux System Development at QiNet S.r.l.

Developer of the '*QiLinux*' GNU/Linux distribution for *i586* and *ppc* architectures, the first Italian distribution *created from scratch*.

April 2006 – December 2006 (9 months). Leader of the team that has developed QiLinux 2.0, the derived commercial products '*Tuga Desktop*', and the educational live CD '*QiLinux Docet*' and '*Qiko Junior*'.

Between 2003 and 2006 I had an experience as a Linux distribution developer which involved me into many different activities ranging from the conception and creation from sources of all the pieces and technologies of a modern Linux distribution to the development and debugging in the Linux environment and the compliance with the available standards.

Summary of my tasks

- Creation and updating of all the specfiles shipped by the QiLinux project;
- Build the software for all the supported architectures;
- Integration in QiLinux of all the available Linux desktop and server technologies;
- Products quality, usability analysis, bug fixing, and conformance to the LSB standards;
- Patching of the security issues and public release of the '*QiLinux Security Advisories*';
- Development of the *autospec* and *libspec* software for speed up the packages update, and make it possible the continuous integration and testing of the new software in the mainstream distribution;
- Development of the C software what was responsible for the creation of the packages dependency chart and the PHP pages in the QiLinux web portal;
- Creation of the final ISO images of the opensource and commercial products;
- Installation and support of QiLinux boxes.

Technologies

All the Linux technologies ranging from the Linux kernel plus user-space related software (devfs, udev, hal, D–Bus, ...) to the system tools, the local, printing, and network services up to the development (autotools, GNU/gcc suite, LLVM, SVN, mono, OpenJDK, ...) and desktop environments (KDE, Gnome, LXDE).

For more details,
`https://sites.google.com/site/davidemadrisan/linux`

March 2003 – August 2003 **Cisco Network Specialist at Intesa Sanpaolo**

Working as a Cisco LAN/WAN network administrator expert in one of the most important banks of Italy.

Summary of my tasks

- Managing the local and WAN network infrastructure of the customer;
- Proactively provide solutions for improving the customer's network;
- Install, configure, and administer an HP OpenView monitoring station; develop some scripts in the Windows environment for processing alerts and sending emails.

Technologies

- Cisco routers and switches;
- HP OpenView monitoring.

October 2001 – January 2003 **Cisco Network Expert Engineer at Atlanet**

Cisco Engineer at Atlanet (FIAT's TLC venture now part of the BT Telecom group), working in a highly business and production critical environment.

Development of a fully featured software for generating Cisco router configurations from a minimal set of specifications given by a network architect.

Summary of my tasks

- Implement, troubleshoot, validate very large migration projects to the MPLS technology;
- Configure and install Cisco routers on-site and troubleshoot the connectivity issues;
- Provide solutions to customer's network problems by using the Cisco technologies;

Technologies

- Cisco routers with ADSL, ISDN, serial and Ethernet interfaces;
- LAN protocols: DECnet, Ethernet, IBM SNA, TCP, Token Ring, UDP;
- Routing protocols: EIGRP, OSPF, BGP;
- Other network protocols/technologies: DLSw, ICMP, IP, L2TP, MPLS, NAT, SNMP.

October 1999 – September 2001 **Cisco Network Engineer at Fiat GlobalValue**

Working either on-site or remotely for different Italian customers (Fiat ITS and GlobalValue, Sanpaolo, Miroglio Tessile) to develop, troubleshoot and manage their Cisco WAN networks.

Develop small network related scripts for calculating IP parameters and doing SNMP queries on routers not accessible by our team.

Technologies

Cisco routers, Cisco IOS, routing (EIGRP, OSPF, BGP), network (telnet, ICMP, SNMP) protocols.

October 1998 – February 1999 **TEX development at Academy of Sciences**

Development of a collection of TeX macros and document styles written in pure plainTeX for the Royal cademy of Sciences of Turin.

The aim of this project was to develop a document style, using the plainTeX language, to easily write Mathematics and Physics papers by emulating the Microsoft Word Look&Feel. The most difficult part was implementing a complete support for the TrueType fonts, ot natively available under plainTEX.

See the result at:
`https://github.com/madrisan/TeX-macros/tree/master/astmacro`

LANGUAGES

- *Italian*: Native language
- *French*: Bilingual proficiency
- *English*: Professional working proficiency

EDUCATION

September 2014 – Coursera, edX, Udacity, FUN, Complexity Explorer MOOCs

Lifelong learning for professional development and fun: 50+ MOOCs completed, mainly on Data Science, Cloud Computing, and parallel/generic/functional/web programming.

October 1994 – July 1999 **Università degli Studi di Torino**

Master's degree in Applied Science, Mathematics and Computer Science.

September 1982 – June 1993 **Conservatorio di Musica G. Verdi, Torino**

Bachelor's degree, Music Performance, Piano, Composition.

CERTIFICATIONS, COURSES & ONLINE SPECIALIZATIONS

2016 – Full Stack Web Development Specialization – *The Hong Kong University.*
2016 – Paradigms of Computer Programming – *Université catholique de Louvain.*
2015 – Big Data XSeries Certificate – *Berkeley University & Databricks.*
2007 – VMware Certified Professional on VI3 (VCP310).
2003 – VPN-1/Firewall-1 Management II NG.
2003 – ZyXEL Certified Network Engineer.
2002 – CSPFA (Cisco Secure PIX Firewall Advanced).
2001 – BSCN (Building Scalable Cisco Networks).
2000 – CLSC (Cisco LAN Switch Configuration) Certified.

BIG DATA and MACHINE LEARNING

The Johns Hopkins University
Data Science Specialization

- The Data Scientists Toolbox
- R Programming
- Getting and Cleaning Data
- Exploratory Data Analysis
- Reproducible Research

Berkeley University & Databricks
Big Data XSeries

- Introduction to Big Data with Apache Spark
- Scalable Machine Learning

Université de Strasbourg on FUN – Stochastic Evolutionary Optimization

Stanford University on Coursera – Machine Learning

Microsoft on edX – Introduction to R

Hardvard University on edX – Statistics and R for Life Sciences

BUSINESS

Ludwig–Maximilians Universität München on Coursera – Competitive Strategy

CLOUD COMPUTING and DEVOPS

University of Illinois at Urbana-Champaign

- Cloud Computing Applications
- Cloud Networking

AWS Training on Amazon Web Services – AWS Technical Essentials (version August 2016)

Linux Foundation

- LFS132.x Introduction to Cloud Foundry and Cloud Native Software Architecture
- LFS151.x Introduction to Cloud Infrastructure Technologies
- LFS152.x Introduction to OpenStack
- LFS158.x Introduction to Kubernetes
- LFS161.x Introduction to DevOps: Transforming and Improving Operations

Red Hat on edX – DO081x Fundamentals of Containers, Kubernetes, and Red Hat OpenShift

MATHEMATICS

Santa Fe Institue

- Introduction to Dynamical Systems and Chaos
- Fractals and Scaling
- Introduction to Renormalization

PROGRAMMING

University of Illinois at Urbana-Champaign on Coursera – Heterogeneous Parallel Programming

École Polytechnique Fédérale de Lausanne

- Introduction à la programmation orientée objet en C++
- Functional Programming Principles in Scala

Universidad Carlos III de Madrid on edX – Introduction to Programming with Java (part 1)

The Hong Kong University of Science and Technology

- Introduction to Java Programming (part 2)

Université catholique de Louvain

- Paradigms of Computer Programming – Fundamentals
- Abstraction and Concurrency

University of Michigan on Coursera – Using Python to Access Web Data

WEB PROGRAMMING

W3C on edX – Learn HTML5 from W3C

University of London

- Responsive Website Basics: Code with HTML, CSS, and JavaScript

University of Michigan

- Introduction to HTML5
- Advanced Styling with Responsive Design

The Hong Kong University of Science

Full Stack Web Development Specialization

- HTML, CSS and JavaScript
- Front-End Web UI Frameworks and Tools
- Front-End JavaScript Frameworks: AngularJS
- Multiplatform Mobile App Development with Web Technologies
- Server-side Development with NodeJS

- Full Stack Web Development Specialization Capstone Project

Pluralsight on Code School – Shaping up with Angular.js

Microsoft

- Introduction to JQuery
- Introduction to TypeScript

MongoDB

- M101JS: MongoDB for Node.js Developers
- M101x: Introduction to MongoDB using the MEAN Stack

at&t, Google, GitHub, Hack Reactor
Front-End Web Developer Nanodegree

- Intro to AJAX
- JavaScript Basics
- JavaScript Design Patterns
- JavaScript Testing
- Object-Oriented JavaScript

OTHER DOMAINS

University of California, san Diego

- How to Learn: powerful mental tools to help you master tough subjects