Web: https://tina.pm/
Email: tina@tina.pm
GitHub: NightTsarina
Updated: *Aug, 2020*

PGP/GPG key: 0xAA230FC45F8C27B1
Fingerprint:
DAA6 EFF1 C627 EA1C 26B1
A692 AA23 0FC4 5F8C 27B1

Martina Ferrari

Systems administrator & programmer

Professional expertise

Systems administration

UNIX

- UNIX systems specialist with more than 22 years of experience in GNU/Linux systems: architecture, standards, and best-practises.
- High-availability, high-throughput, and distributed systems: design, implementation, and troubleshooting.
- Proactive monitoring of systems, early detection of failures and bottlenecks, post-mortem analysis: prometheus, nagios, munin, MRTG.
- Automated configuration and deployment of systems with Ansible.
- Traditional UNIX services: directory services (DNS, LDAP, NIS), web servers, mail servers. Configuration, maintenance, and integration with other systems.
- Database engines set-up and maintenance: MySQL, Postgres, Oracle.
- Non-relational databases and caches: LMDB, BDB, BigTable, memcached, Redis.
- Software versioning systems: git, mercurial, subversion, darcs, CVS.

Network administration

- Practical and theoretical knowledge of open standards, networking protocols: IP, TCP, UDP, and application protocols over IP.
- Complex network administration: firewalling, VPNs, NAT, protected networks isolation, LAN bridging, advanced routing (multiple internal networks, multiple ISPs), traffic control and quality of service (QoS).
- Knowledge of telecommunications technology, WAN links, WiFi networks.
- Basic knowledge of ATM & X.25. Basic knowledge of Cisco (IOS) administration.

Programming

Languages

- C, C++, Java, Perl, Python, Prolog, Haskell, Scheme, SQL, PHP, JavaScript, shell scripting.
  Assembly: real and protected mode IA-32, Itanium, microcontrollers.

Web programming

- Web-application frameworks (mod_perl, Flask, Servlets, JSP). HTML5 and CSS. REST and web-RPC application interfaces.

Release management

- Release automation: Make, Ant, distutils, setuptools, MakeMaker, autotools. Systems integration using Debian (`deb`) and RedHat (`rpm`) packages. Continuous integration.

Advanced topics

- Kernel programming. BSD sockets, IPv6, low-level I/O, non-blocking I/O, signal handling, concurrency and multi-threading, distributed processing. Image processing: convolution filters, shape detection, partial differential equations (PDEs).

Network, systems and application security

Minimising risk

- Network protection with iptables/netfilter/nftables.
- Systems isolation: chroot jails, User Mode Linux, Linux Containers (LxC), KVM, VirtualBox. Frontends: libvirt, systemd-nspawn, Docker.
- Early vulnerability detection during design and implementation.
- Working knowledge of different exploit techniques.

Recovery

- Forensics analysis: damage, back-doors, root-kits, gathering of attacker's information.

Cryptography

- Public-key systems, theoretical knowledge of cryptography algorithms, cryptanalysis.

Work experience

2013 - • **Tina.pm. Independent consultant**. Working on projects for companies around the world, delivering creative solutions for complex problems. Specialised in systems administration/DevOps and systems programming. Some customers:
Curelator/N1-Headache. Back-end developer, main systems administrator, and consultant on architecture, design, and data security of the system: a mobile application targeted at migraine sufferers.
Front Line Defenders. Back-office systems upgrading and securing.
Openet. Helping the Environmental Engineering team automate processes, improve monitoring, and debugging problems with their customers: mobile communication companies around the world.
Dos Monos S.A.. Freelance developer, providing software solutions for complex requirements.

2011 - 2013 • **Google Ireland. Site reliability engineer (SRE)**. As part of the global team responsible for keeping the company services up and running, worked on a small team that specialises in supporting datacentre automation: repairs work-flows, parts replacement, and automated installations.
Designing and implementing tools to automate and verify configuration changes applied globally. Revamping the monitoring system that tracks every beat of machines deployed in clusters around the globe. Learning to deal with planetary-scale networks, planned and unplanned failures, loosely-connected distributed systems, and generally changing my worldview on systems administration.

2009, 2010 • **INRIA Sophia Antipolis (France). Internship: "NEPI: an experiment plane for experimentation testbeds"**. Two intership periods, producing research tools and a paper:
Designing and implementing an API to access different network simulators in an uniform way from user tools.
Continuing the work started in the previous year, designing and implementing a network test-bed using Linux Containers (LxC).

2000 - 2009 • **Solar Servicios On-Line / Decidir / Dos Monos S.A.. UNIX System administrator, network administrator and programmer**.
Managing all GNU/Linux and Solaris systems, the internal network comprising branches in Argentina and Brazil, 4 data centres, and 5 internet providers.
Developing software for high-value company products.
Consulting in security, protocols, standards, programming, and systems integration. Teaching courses on UNIX, Perl, and networking.

1997 - 2000 • **Universidad Nacional de General Sarmiento. Network administrator**.
Managing GNU/Linux, Solaris, and Novell 4.1 hosts, 200+ workstations and the students' lab. Internal consulting in hardware and communication equipment acquisition.

Formal studies

2009 - 2010 • **Master of Science**. Ubiquitous Networking and Computing (UBINET).
University of Nice Sophia Antipolis. Full-time student with a scholarship given by INRIA.

1996 - 1998,
2006 - 2008 • **Licentiate** (completed 4 out of a 6 years degree). Computer Science licentiate student.
Universidad de Buenos Aires. Facultad de Ciencias Exactas y Naturales.

Courses

2008 • **Programación de sistemas operativos**: Semester-long hands-on intensive course on operating systems programming, in which a small operating system is written from scratch by the students.
Universidad de Buenos Aires.

2006 • **Escuela de Ciencias Informáticas '06**, T1 course: Image processing with Partial Differential Equations. Intensive 15-hour course.
Escuela de Ciencias Informáticas '06, N2 course: Introduction to distributed algorithms. Intensive 15-hour course. Universidad de Buenos Aires.

1998 • **Cryptology**, semester-long course. Universidad de Buenos Aires.

1997 • **Solaris introductory course**, taught by SUN Argentina in partnership with Red de Interconexión Universitaria (RIU). Universidad Nacional de Córdoba.

Publications

2009 • **NEPI: Using independent simulators, emulators, and testbeds for easy experimentation**.
M. Lacage, M. Ferrari, M. Hansen, and T. Turletti.
ROADS'09: 4th workshop on real overlays and distributed systems.

2016 • **Site Reliability Engineering**. Article published in the Mexican print magazine Software Guru.

Languages

Spanish	• Native speaker.
English	• Fluent in technical and everyday use.
French	• Intermediate level, fluent conversational level, experience living in France for 18 months.
Japanese	• Achieved fourth level (san-juu). The Japan Foundation & Japan Educational Exchanges and Services.

Aptitudes & skills

- Self-management ability.
- Self-made education.
- Constantly learning and updating knowledge.
- Aptitude for rapid learning of new technologies.
- Always looking for doing the best possible job.
- Knowledge and careful following of established standards and best-practises: RFCs, FHS, Debian policy, etc.

Debian

- Involved since 2001, maintaining packages since 2004, became official Debian Maintainer in 2007.
- **Accepted** as official Debian Developer in 2008.
- Original author of two tools used widely by the project: **KGB bot** and **Package Entropy Tracker**.
- Co-editing the **Debian Package of the Day** website between 2007 and 2009.
- Main co-organiser of **DebConf 8**, held in Argentina during August, 2008. Member of the international team that coordinates every year's conference. Chair of the conference between 2014 and 2015.
- Organiser of many smaller events: Debian SunCamp **2016** & **2017**, Bug Squashing Parties, and regional User Group meetings.

Other interests

- Document composition with LaTeX.
- Basic knowledge of telephony, electricity and electronics.
- Music aficionado, owner of a big music collection.
- Resolving mathematics and programming problems for fun.
- Contributing with the **Open Street Map** project as an amateur cartographer.
- Long-term member of the **Couch Surfing** project. Founder and co-organiser of the biggest regular CouchSurfing social event in Dublin.
- **Digital nomad**, travelling the world while working on cool projects.

Honours

1992	• First Gral. Sarmiento Mathematics Olympiad. **Second place**.
1993 - 1994	• Argentine Informatics Olympiad. **First place in the first round. 1994**.
1994 - 1995	• Argentine Mathematics Olympiad. **All stages approved**.
1994 - 1995	• Buenos Aires Mathematics Olympiad. **Honourific mention, 1994**. **Fourth place, 1995**.
1995	• National team selection for the International Mathematics Olympiad. **12th place**.
1997	• 12th E. Paenza mathematics competition for university students. **Third place, teaming with Juan Pablo Vicedo**.