

Matteo Croce

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Date of birth: January 9, 1985

*Telecommunication is the art of extracting useful
information from a trillionth of a watt*

Work experience

June 2014–
current

Senior Software Engineer, *ADB Italia S.r.l. (formerly Pirelli Broadband Solutions S.p.A.)*, Milan, Italy

Firmware Engineer

Head of IoT Embedded Unit

Notable activities:

Development of Access Gateway Software

- Linux kernel/userspace development on Broadcom platforms
- Design of network architecture which supports DMZ, VPN, dual IPv4/IPv6 stack, multiple WAN, pool of public addresses and mobile failover
- Optimization of Wi-Fi drivers, implementation of Wi-Fi standards like 802.11h, 802.11w, support for hardware offloading via dedicated MCU
- Development of Internet-of-Things/M2M appliances based on Broadcom WICED and MQTT to be used in electrical appliances

Achievements:

- Implementation of the complex network scenarios are actually on the field in Swisscom Centro Business CPE
- My SoftGRE implementation is actually on the field as Fastweb Wow Fi.

July 2009–
May 2014

Software Engineer, *Fluidmesh Networks S.r.l.*, Milan, Italy

Development of Wi-Fi products on embedded Linux environments.

Maintenance and critical bugfixing for existing products.

- Linux userspace development on *PC Engines* and *Atheros* platforms
- Wi-Fi and Ethernet driver optimization and tuning, implementation of 802.11n protocol
- Design of a complete manufacturing process with automated testing
- Bring up of in house manufactured AR9344 board, from bootloader to kernel support, to userspace
- Web interface GUI programming in *PHP*, *Haserl* and *Flex*
- Setup and maintenance of a Subversion/Git server with automatic build machine
- Maintenance of customer support website and user GUI in *Flex*
- Development of a custom Click based network stack from ground up, porting of Click to newer kernels
- Automated testing tools with *Selenium* and *FlexMonkey/FlexMonkium*
- Build of a remote CLI interface for system administration
- Usage of Rohde&Schwartz and HP spectrum analyzers and power meter, for FCC and ETSI certification

Achievements:

- The Fluidmesh Mito and Volo product lines account thousands of high speed, high availability installations worldwide
- Fluidmesh Fluidity is actually deployed worldwide in several mission critical installations
- Huge improvement of testing speed and quality by building a suite of testing tools
- Fluidity control panel is actually in use on railways, subways and ferries

May 2008–
June 2009

System Administrator, *Smartlab S.r.l.*, Rende, CS, Italy

Maintenance of cloud based applications for education and tourist informations

- Installation, configuration and maintenance of several daemons: *Apache*, *Tomcat*, *JBoss*, *Squid*, *proFTPD*, *OpenLDAP*, *Postfix*, *PostgreSQL*, *Bind*, *Subversion*, *OpenVPN*
- Development of geolocalized Linux based tourism information kiosks
- Development of Qt/C++ application to sell advertising through the kiosk
- Maintenance of system network, development servers and VPN

Nov 2007

Multimedia Engineer, *Swallow Productions*, Toronto, ON, Canada

Design of a Multimedia content delivery solution

- Administration of a FreeBSD based encoding server
- Batch encoding of video content in *MPEG-4 AVC/H.264* and *HE-AACv2/AAC+* suitable for streaming on *Flash Player* or mobile devices
- Setup of a pseudo streaming web server, capable to serve content from the middle of the file thus allowing the user to seek without buffering
- Develop an *HE-AACv2/AAC+* encoder library:
<https://github.com/teknoraver/aacplusenc>
- Develop tools to automatically encode video content with advanced options (autocrop, audio peak normalization, thumbnail creation, etc.):
<https://github.com/teknoraver/mp4tools>

Opensource software contributions

Please check my Open Hub profile for a complete record of my contributions at <https://www.openhub.net/accounts/teknoraver>

2007–
present

Maintainer, *OpenWrt*, Embedded Linux distribution

- Ported the Texas Instruments DSL driver to linux 2.6.18
- Maintained the Texas Instruments AR7 port, acx100 Wi-Fi driver and the DSL/ATM driver
- Porting of the *atheros*, *ar71xx* and *avr32* ports to new kernels
- Bugfixes on *lantiq* platform
- Maintainership of some packages, like *ptpd*, *ccrypt*, *wshaper*
See OpenWrt git log for an (incomplete) list of commit

Opensource contributions

- Submission of some patches to the Linux Kernel
- Spot contributios in OSS projects like *Busybox*, *Sane*, *Debian*, *Click*, *KDE*, and others

Education

2003 **Ingegneria Informatica - Computer Engineering**, *Università della Calabria*

Languages

Italian Native
English Professional proficiency

Technical skills

Operating Systems GNU/Linux, FreeBSD, Microsoft Windows, Mac OS X, ThreadX
Programming languages C, C++, Qt, POSIX Shell, Perl, PHP, JavaScript
Networking TCP/IP, 802.3, 802.11, DNS, ARP, ATM, PPP, IGMP
Android Programming I developed some *Android* apps whith more than 1.000.000+ downloads
Debugging tools GDB, Valgrind, printk
Databases PostgreSQL, MySQL, SQLite
Multimedia Skills H.264, AAC, MP4, mencoder, ffmpeg, avidemux, audacity, sox
Other technologies and tools Make, Git, Quilt, JQuery, HTML, L^AT_EX, JTAG

Interests

Open-source Contributing to open-source software projects
Automotive Mechanic and software Car tuning, CAN-BUS, In Car Entertainment
Hi-Fi High-end audio equipment
Electronic Soldering, probing UART and TTL with multimeter, Dremel usage
Nerd I'm interested in everything that is technology related and hackable