



## Enrico Mioso

**Nationality:** Italian

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### ABOUT ME

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I am a blind person but very independent, i love life and personal or professional challenges. I have a positive and curious attitude, i like to learn, know new things and get involved. I like the human interaction and i think that diversity is an added value to grow from personal and professional point of view.

### WORK EXPERIENCE

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#### Router firmware developer

*Meizo Networks* [ 04/2017 – 01/2019 ]

- <http://it.meizonetworks.org/>

**Country:** United Kingdom

Development of router software/firmware to allow cloud communication and remote control on end-devices providing scalable, flexible, secure, consistent and resilient solutions based on XMPP protocol. I was the main technical responsible for software development and solution architecture design.

More in details i was responsible of:

- 4G modem control.
- Server architecture development.
- Implementation of scalable solutions based on XMPP.
- Custom back end development (LUA language).
- Automated upgrade solutions and robustness against failure (the system was automatically capable of upgrading the firmware).
- Software Architecture Design.
- Firmware Development.
- End devices to server communication and integration.
- Resilient and secure application development.
- Design and development of scalable, consistent, distributed and high-flexible architecture.
- Cloud Computing.
- Open WRT System Integration (UBUS, UCI, RPCD).

## Software and firmware developer

*Trentino Network* [ 09/2013 – 04/2014 ]

- <http://www.trentinonetwork.it/>

City: Trento

Country: Italy

Development of a device to verify the presence of Wi-Fi networks, estimate the resources occupancy and monitor the number of end users connected. Data were recorded and made available in a central server following secure, redundant and resilient computing approaches. I was responsible for the OS engineering, platform maintenance, system components integration and scalable and secure solutions design.

In particular I was responsible of:

- Implementation of a state-machine that made the system able to switch between Wi-Fi, Ethernet and 3G network seamlessly.
- Development of support patches for the 3G hardware we had available (ALFA Networks).
- Scalable architecture design, making the system easily deployable for a number of devices.
- Data processing and storage targeting security and privacy requirements, protecting private information (e.g.: MAC Addresses of mobile phones) and encrypting data.
- Deployment of a big data system capable of managing a big number of devices, associating cryptographic keys to each individual system for identification and management purposes.

## Front end software developer for surveillance application

*Gardaland s.r.l.* [ 08/2019 – 08/2019 ]

Development of a front end application that, decoding raw data from surveillance cameras, was able to count accesses and exits. and give an instant overview of the number of people.

## Contributor to Open WRT Community

*Open WRT community* [ 2016 – 2017 ]

- <https://openwrt.org/>

Cooperation and commitment with Open WRT Community for problem solving activities.

- Allow the upgradability of devices like the TP-Link RE450 repeater.
- Improve the robustness and security of the Netgear R6220 router device by marking as read only the reserved flash memory, with the goal of preventing unwanted accesses and preserving the correct functionalities of the device.
- Add support for the TP-Link 4G Mobile Router TL MR6400 in the ATH79 target, transitioning the device from the AR71xx C-based definition to DTS-based one, with the aim of making the Operating System recognize the device and enabling a consistent communication.
- Contribution, update and enhancement of some Open WRT packages as Idbus (<https://openwrt.org/packages/pkgdata/ldbus>) and libconfig.
- Support the community in discovering problems related to Linux IPTables firewall TRACE module and cooperation in related bug fixing activities.

## **Contributor to Linux Kernel Community for driver applications**

*Linux Kernel Community* [ 2015 – 2016 ]

- <https://www.kernel.org/>

Cooperation and commitment with the Linux Kernel Community for driver based projects, solutions development and problem solving activities.

- Cooperation with the maintainer of ALSA kernel subsystem to solve crashes on my pc (EEE PC 1101AH) related to HD Audio driver.
- Cooperation with the maintainer of ALSA kernel subsystem to solve out-of-bound position reporting issues on Compaq 2136EA driver.
- NDIS support and CDC ethernet deployment on Huawei K3806 device to increase performance and enhance efficiency speed.
- Report accessibility issues and possible enhancements for open source software as GNU Nano Editor and NCMPC Music Player Daemon client.

## **Contributor to Linux Kernel Community - Kernel driver development**

*Linux Kernel Community* [ 2016 ]

[https://github.com/torvalds/linux/blob/master/drivers/net/usb/huawei\\_cdc\\_ncm.c](https://github.com/torvalds/linux/blob/master/drivers/net/usb/huawei_cdc_ncm.c)

Development of driver suitable for 3G/4G dongles with the aim of improving performances and optimizing communication capabilities. In particular my driver provides communication solutions to expose embedded AT commands over the CDC WDM interface standard by resembling the NCM standard. The driver was successfully tested on Huawei E3131 / E3251 3G dongles.

## **Contributor to Linux Community - NCM driver development for E3372 Huawei 4G usb dongle**

*Linux Kernel Community* [ 2016 ]

[https://github.com/torvalds/linux/blob/master/drivers/net/usb/cdc\\_ncm.c](https://github.com/torvalds/linux/blob/master/drivers/net/usb/cdc_ncm.c)

Enhancement of the cdc\_ncm.c driver to place NDP frames at the end of the NCM format, in order to fix communication issues with Huawei E3772H firmwares.

## **Contributor to Linux Kernel Community - ONDA MT689DC driver development**

*Linux Kernel Community* [ 2016 ]

[https://github.com/torvalds/linux/blob/master/drivers/net/usb/qmi\\_wwan.c](https://github.com/torvalds/linux/blob/master/drivers/net/usb/qmi_wwan.c)

Development of qmi\_wwan driver on LTE usb modem ONDA (ZTE manufacturer) to maximize device performance, enhance stability and increase overall throughput.

## **Contributor Linux Kernel Community - Olivetti Olicard 200 driver development**

*Linux Kernel Community* [ 2015 ]

[https://github.com/torvalds/linux/blob/master/drivers/net/usb/qmi\\_wwan.c](https://github.com/torvalds/linux/blob/master/drivers/net/usb/qmi_wwan.c)

Development of qmi\_wwan driver on Olivetti Olicard 200 USB internet modem to maximize device performance, enhance stability and increase overall throughput.

## **Contributor to Linux Kernel Community - Option driver integration on ONYX 3G dongle** *Linux Kernel Community* [ 2015 ]

<https://github.com/torvalds/linux/blob/master/drivers/usb/serial/option.c>

Development of the Option driver on the Alfa Network Onyx 3G modem USB device.

## **Contributor to Linux Kernel Community - Driver decoder development** *Linux Kernel Community* [ 2015 ]

<https://github.com/torvalds/linux/blob/master/drivers/media/usb/dvb-usb/dw2102.c>

Enhance the vb-usb/dw2102.c driver adding Cinergy S2 rev4 DVB-S2 decoder support in order to fix communication issues.

## **LANGUAGE SKILLS**

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Mother tongue(s):

**Italian**

Other language(s):

**English**

**LISTENING C1 READING C2 WRITING C1**

**SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1**

## **DIGITAL SKILLS**

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### **Software and Programming Languages**

GNU Radio Toolkit / SQLITE / Python / JSON / Modem manager / Valgrind / Windows Batch Scripting / Git / L  
UA / Linux / C, C++ / shell scripting / xml / Maxima / Latex / Vhdl

### **Hardware**

ECERA-based modem equipment / HISILICON-based 3G/4G modem / Router hardware / QUALCOMM-based  
3G/4G modem

### **Communication Protocols**

USB CDC NCM / XMPP / NFS / QMI

## **ORGANISATIONAL SKILLS**

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### **Professional competences**

- Good predisposition to work: i want to do my best and give my professional and human contribution to achieve company objectives and increase my personal skills.
- High motivation, proactiveness, commitment, enthusiasm, wish to grow.
- Good ability to work on different activities at the same time, manage emergencies, understand working priorities and work efficiently under stress conditions.

### **Team building and cooperation**

- Good attitude for team working, cooperation and team building; i like team diversity, learn from everyone's contribution and propose my personal point of view with a positive approach.
- Good project management skills.
- Good ability to interact and cooperate with technical communities (i.e. i enjoy diversity).

## Problem solving

- Good analytical attitude.
- Good ability to identify critical issues, understand where and how to intervene, estimate time required for fixing and provide problem solutions.
- Good ability to cooperate in teams or community to solve problems and to find specific or architectural solutions.

## EDUCATION AND TRAINING

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### Master degree in Telecommunication Engineering

*University of Trento* [ 09/2012 – 03/2017 ]

Address: Trento (Italy)

### Bachelor Degree in Electronics and Telecommunications Engineering

*University of Trento* [ 09/2008 – 07/2012 ]

Address: Trento (Italy)

### High School Diploma, Computer Specialization

*ITIS G. Marconi* [ 09/2003 – 07/2008 ]

Address: Verona (Italy)

## PUBLICATIONS

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### An SDR-based Reconfigurable Multicarrier Transceiver for Terrestrial and Satellite Communications [2017]

Enrico Mioso, Mattia Bonomi, Fabrizio Granelli, Claudio Sacchi, "An SDR-based Reconfigurable Multicarrier Transceiver for Terrestrial and Satellite Communications" in Proceedings of 2017 IEEE Aerospace Conference, Piscataway (NJ): IEEE, 2017, p. 1-13. Atti di: IEEE Aerospace Conference, Big Sky (MT), 4-11 March 2017.

<https://ieeexplore.ieee.org/document/7943949>

## NETWORKS AND MEMBERSHIPS

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### Linux User Group Mantova

<https://lugman.org>

### Unione Italiana Ciechi

<https://www.uiciechi.it/>

## HOBBIES AND INTERESTS

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### Empower people with disabilities with free softwares

Empowering people with free software has always been very important to me. Whenever i can contribute to free software development my goal is to make things easier for the users and the community. This is especially true for people with disabilities where improving accessibility can improve the quality of life.

### Pets lover

I love animals in particular dogs and cats; i adopted three abandoned dogs (and now they are part of my family).