

# EUROPEAN FORMAT CURRICULUM VITAE



## PERSONAL INFORMATION

Name

**MINUTOLI SAVERIO**

Address

Telephone

Fax

E-mail

Nationality

ITALIAN

Date and place of birth

08 GENNAIO 1963 – MESSINA (ME)

Civil status

MARRIED TO ANNA MARIA

Children

2 - FABIOLA (1991) AND FEDERICO (1997)

Military Obligations

Lieutenant of Complement, 106° course Anti-aircraft Artillery. January 1982 – April 1983

## EDUCATION

- Date (from – to)
- Name and type of organisation providing education
- Main subjects / professional skills
  - Qualification achieved
  - Degree thesis title

from January 2006 to April 2009  
Universita' Degli Studi di Genova  
Doctoral School of Science and Technology for the Information Society  
Electronic Engineering  
**PhD in ELECTRONIC, INFORMATION AND TELECOMMUNICATION ENGINEERING**  
"Engineering of the T1 detector readout for the TOTEM experiment at the LHC"

- Date
- Name and type of organisation providing education
- Main subjects / professional skills
  - Qualification achieved

July 2009  
Istituto Nazionale Fisica Nucleare,  
Selective procedure, call for applications n. 13156/2009  
Electronic Engineering  
**Technologist Qualification - Electronics and Computer Science**

- Date
- Name and type of organisation providing education
- Main subjects / professional skills
  - Qualification achieved
  - Vote

June 2005  
Universita' Degli Studi di Genova,  
Department of Biomedical and Electronics Engineering (DIBE)  
Electronic Engineering  
**State examination, qualification to practice the profession of ENGINEERING**  
**220 / 220**

- Date (from – to)
- Name and type of organisation providing education
- Main subjects / professional skills
  - Qualification achieved

from September 1999 to March 2005  
Universita' Degli Studi di Genova,  
Department of Biomedical and Electronics Engineering (DIBE)  
Electronic Engineering – microelectronics specialization  
**Master's Degree in Electronic Engineering**

- Degree thesis title

Five-year degree old order.  
"Design and development of the Trigger and Slow Control Interface boards for IFR BaBar experiment at SLAC"

- Vote

**110 / 110 Laude**

- Date (from – to)
- Name and type of organization providing education
- Main subjects / professional skills
  - Qualification achieved

from September 1976 to June 1981  
 State Industrial Technical Institute – Guglielmo Marconi – Messina (ME)

Electronics, electrical engineering, electronic assemblies  
**Industrial Expert Chief Technician, Electronics Specialization**

## WORK EXPERIENCE

- Date (from – to)
- Name and address of employer
  - Type of business or sector
- Type of application

from **01-03-2021 to DATE**  
 Istituto Nazionale Fisica Nucleare di Genova – via Dodecaneso 33, 16146, GENOVA  
 Theoretical and experimental Research Institute, in the fields of subnuclear, nuclear and astroparticle physics.  
 Full Time: Research Technologist, High Technology Department Manager

The High technology Department is responsible for technology transfer in the following areas of research (non-exhaustive list):

- Design, development and testing of specific integrated circuits, digital and analog electronics
- Testing of complex electronic systems and resistance to ionizing radiation by beam
- Electronics for high-speed data transfer, over cable, fiber optics and wireless
- Modeling, design, simulation and construction of mechatronic systems using specific CAD software and numerically controlled machine tools
- Prototyping of mechanical systems through advanced EDM and additive manufacturing techniques (resin and AISI 316L stainless steel jet 3D printers).
- Developments of cryogenic systems, based on liquid nitrogen or CO<sub>2</sub>, for thermal stabilization of large sensor systems.

- Date (from – to)
- Name and address of employer
  - Type of business or sector
- Type of application

from **08-02-2021 to DATE**  
 Istituto Nazionale Fisica Nucleare di Genova – via Dodecaneso 33, 16146, GENOVA  
 Theoretical and experimental Research Institute, in the fields of subnuclear, nuclear and astroparticle physics.  
 Full Time: Research Technologist, Technology Transfer INFN-Genoa Manager

The Mission of the group is facilitating the flow of knowledge and technology from fundamental physics to the market. We evaluate, protect, and license technologies and we make available our expertise for cooperation also thanks to the distribution of the team throughout Italy and to the INFN consolidated international network.

The INFN is a basic research leading organization in the field of physics. To carry out excellent scientific experiments, researchers, technologists and technicians develop cutting-edge technologies in our specialized laboratories, always acquiring new skills.

- Date (from – to)
- Name and address of employer
  - Type of business or sector
- Type of application

from **01-08-2020 to DATE**  
 Istituto Nazionale Fisica Nucleare di Genova – via Dodecaneso 33, 16146, GENOVA  
 Theoretical and experimental Research Institute, in the fields of subnuclear, nuclear and astroparticle physics.  
 Full Time: Research Technologist.

The activities and tasks to which I am currently contributing are:

1. TOTEM Project Leader experiment, specifically apparatus maintenance.
2. Deputy Manager of Electronic Design Department
3. Senior designer of the LHC project data acquisition system, CT-PPS (CMS-TOTEM Precision Proton Spectrometer). This silicon detector, positioned at about 200m symmetrically to CMS, aims to improve the accuracy of trace reconstruction and the

- position of the interaction point in proton-proton collisions.
4. Senior designer of the acquisition system of the INFN R&D project called TIMESPOT (TIME and Space real-time Operating Tracker) for a high time resolution detector up to a few tens of picoseconds, for future high luminosity particle colliders.:
    - a. 3D sensors, silicon or diamond
    - b. High precision time and position measurements
    - c. Low noise front-end development
    - d. Track reconstruction implemented in FPGA
  5. Chief Technology Officer of the LHCb Genoa experiment for detector upgrades RICH\_1 and RICH\_2:
    - a. Responsible for production, testing and quality of Front-End circuits called Baseboard for connection and distribution of signals from multi-channel PMT detectors
    - b. Responsible for production, testing and quality of the High Voltage distribution system for PMT detectors, from detector to Counting Room.
    - c. R&D team designer, for new SiPM sensors for future RICH 1 and 2 detector upgrade developments.

<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Name and address of employer</li> <li>• Type of business or sector</li> <li>• Type of application</li> </ul>	<p>from <b>01-10-2019</b> to <b>31-07-2020</b></p> <p>Istituto Nazionale Fisica Nucleare di Genova – via Dodecaneso 33, 16146, GENOVA</p> <p>Theoretical and experimental Research Institute, in the fields of subnuclear, nuclear and astroparticle physics.</p> <p>Full Time: Technical Collaborator IV level - 2 upgrades.</p> <p>At the end of the Part Time period, necessary for the launch, stabilization and structuring of the R&amp;D division in the company (see next point below), from 01-10-2019, I'm back in charge of Full Time R&amp;D activities in international collaborations involving the INFN section of Genoa.</p> <p>The activities and tasks to which I am currently contributing are:</p> <ol style="list-style-type: none"> <li>1. TOTEM Project Leader experiment, specifically apparatus maintenance.</li> <li>2. Deputy Manager of Electronic Design Department</li> <li>3. Chief Technology Officer of the LHCb Genoa experiment for detector upgrades RICH_1 and RICH_2.</li> </ol>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Name and address of employer</li> <li>• Type of business or sector</li> <li>• Type of application</li> </ul>	<p>from <b>01-09-2015</b> to <b>30-09-2019</b></p> <p>MECTRON SpA, Via Loreto 15A, Carasco (GE)</p> <p>Company operating in the electromedical field, world leader in bone piezosurgery.</p> <p>Part Time. QUADRO liv. 8 super, Chief Technology Officer and R&amp;D Division Manager</p> <p>The activity in the company has allowed me to express and apply the knowledge, techniques and methodologies acquired in many years of basic applied research. I had the support of the company that allowed me to structure in a massive way the R&amp;D division in all its departments, today the division has 42 people including 21 engineers (mechanical, electronic, biomedical) and a research budget + metabolism of 5M€.</p> <p>I list some salient features of my activity in the company:</p> <ol style="list-style-type: none"> <li>1. Director of R&amp;D Division</li> <li>2. R&amp;D Division Human resources manager</li> <li>3. Executive Director of Technology and New Business Strategies</li> <li>4. Head of Technology Transfer, inventor of several industrial patents.</li> <li>5. Operational management of 36 staff</li> <li>6. Project Manager group leader.</li> <li>7. Project management through Stage &amp; Gate and GANTT process</li> <li>8. Document management and certification through PDM/PLM</li> <li>9. Evaluates and concludes R&amp;D framework contracts with Universities.</li> <li>10. Evaluate and conclude development contracts with third-party companies</li> <li>11. Management of research budgets, timing, methods and objectives.</li> </ol>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> </ul>	<p>from <b>01-09-2015</b> to <b>30-09-2019</b></p>

<ul style="list-style-type: none"> <li>• Name and address of employer</li> <li>• Type of business or sector</li> <li>• Type of application</li> </ul>	<p>Istituto Nazionale Fisica Nucleare di Genova – via Dodecaneso 33, 16146, GENOVA Theoretical and experimental Research Institute, in the fields of subnuclear, nuclear and astroparticle physics.</p> <p>Part Time. Technical Collaborator IV level - 2 upgrades.</p> <p>During this period of shared employment with management in a private company, I have maintained and followed all the responsibilities assigned to me:</p> <ol style="list-style-type: none"> <li>1. Project Leader TOTEM experiment, specifically apparatus maintenance.</li> <li>2. Deputy Head of Electronic Design Department</li> <li>3. Contributor to the development of a silicon detector for a tracker inserted in the positions of some of the detectors of the TOTEM experiment defined Roman Pot.</li> </ol>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Name and address of employer</li> <li>• Type of business or sector</li> <li>• Type of application</li> </ul>	<p>from <b>16-07-1985</b> to <b>31-08-2015</b></p> <p>Istituto Nazionale Fisica Nucleare di Genova – via Dodecaneso 33, 16146, GENOVA Theoretical and experimental Research Institute, in the fields of subnuclear, nuclear and astroparticle physics.</p> <p>Full Time. Technical Collaborator, grade level VI ÷ IV</p>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Name and address of employer</li> <li>• Type of business or sector</li> <li>• Type of application</li> </ul>	<p>from <b>01-09-1983</b> to <b>15-07-1985</b></p> <p>DEA – Digital Electronic Automation – Moncalieri (TO) Company operating in the Industrial Robotics and Measuring Machines sector.</p> <p><b>Technical Designer</b> Electronic Designer of digital (uP 8085 - 8088) and analog control systems for motorized handling of mechanical arms and rotors.</p>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Name and address of employer</li> <li>• Type of business or sector</li> <li>• Type of application</li> </ul>	<p>from <b>01-05-1983</b> to <b>31-08-1983</b></p> <p>SMEB – Messina (ME) Company operating in the electromedical</p> <p><b>Technical Designer and Debugger</b> Design, assembly and testing of electro-medical equipment such as electro-stimulators and ultrasound therapy.</p>
<p><b>EMPLOYMENT AT INFN GENOA</b></p>	
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Type of application</li> <li>• Main tasks and responsibilities</li> </ul>	<p>February <b>2023</b> to <b>Date</b></p> <p><b>Director Execution of the Contract and Project Manager:</b> Interlinks between CTF2 to JB2.0, KM3Net upgrade to ARCA115 KM3Net4RR – PNRR project</p> <p>Requirements, design, engineering, production, manufacturing, and validation of electro-optical interconnecting cables, called Interlinks between CTF2 and JB2.0 for a multi-user submarine network KM3Net upgrade ARCA115.</p>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Type of application</li> <li>• Main tasks and responsibilities</li> </ul>	<p>November <b>2022</b> to <b>Date</b></p> <p><b>Director Execution of the Contract and Project Manager:</b> Interlinks between CTF2 to JB2.0, KM3Net upgrade to ARCA 60</p> <p>Requirements, design, engineering, production, manufacturing, and validation of electro-optical interconnecting cables, called Interlinks between CTF2 and JB2.0 for a multi-user submarine network KM3Net upgrade ARCA60.</p>
<ul style="list-style-type: none"> <li>• Date (from – to)</li> <li>• Type of application</li> <li>• Main tasks and responsibilities</li> </ul>	<p>April <b>2022</b> to <b>Date</b></p> <p><b>Incident Coordinator INFN-Genoa</b></p> <p>Delegated by the director to coordinate and instruct crisis processes in which the Genoa INFN section might be involved</p>

- Date (from – to)
- Type of application
- Main tasks and responsibilities

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

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- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

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- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

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- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

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- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities
- 

#### **2022 to Date**

##### **Technical coordinator, PSU 2V300A exp. ASTRAC**

Development, design, engineering, production and certification, of an innovative modular battery power supply for superconducting wires and magnets.

#### **2022 to Date**

##### **Technical coordinator, fast front end for LAPPD detector, exp. EIC\_Net (dRICH – pfRICH)**

R&D of a low-noise preamplifier system and BW at least 2GHz, and TDC measurement system with timing resolution of a few ps, for Large Area Picosecond PhotoDetector (LAPPD) detectors.

#### **2022 to Date**

##### **Consulting engagement, exp. Cleandem**

Development of a self-consistent readout system to be mounted on Unmanned Ground Vehicle devices. Mini NeutronCounter, MiniSiLiF(Si + 6LiF)  
Minispectrometerfor Gamma Rays, MiniRadMeter(SiPM + CsI(Tl))

#### **2021 to Date**

##### **Quality manager, PPS and Outer tracker exp. CMS**

Maintenance of silicon pixel detectors for the tracer of the proton spectrometer (PPS) at CMS. Management of the validation processes of the Service Hybrids for CMS's Phase-2 Outer Tracker.

#### **March 2021 to Date**

##### **High Technology Department Manager**

Development of innovative techniques to be applied to charged particle detectors, especially noise optimization techniques, development of interface front end for high timing resolution measurements. Cold thermalization techniques for detectors, particularly SiPM, with solid-state devices.

#### **February 2021 to Date**

##### **Technology Transfer INFN-Genoa Manager**

Scouting for Ideas, techniques and technologies, facilitating the flow of knowledge and technology from fundamental physics to the marketplace. Intellectual Property protection.

#### **2020 to Date**

##### **Technical coordinator, MaPMT and SiPM BaseBoard exp. LHCb RICH**

Production manager Baseboard type H and R with MaPMT detectors. LHCb upgrade 1a-1b and 2, Coordinator and PM of the development of an innovative SiPM Baseboard with Peltier cell cooling.

#### **from 01-07 2013 to Date**

##### **Electronics Department Deputy Manager**

Co-management of personnel (5 people)  
Study, Design, Engineering, Production, Testing and Installation of electronic data acquisition systems, detector control system, detector safety system, grounding and shielding for experimental Physics equipment.

- Date (from – to)
- Type of application
- Main tasks and responsibilities

from **01-06-2006** to **31-12-2021**

**Project Leader T1 telescope detector TOTEM experiment at CERN (CH).**

Coordinator of the design, construction, production, testing and installation of gas detectors type CSC, in collaboration with the Russian Research Centre PNPI in Gatchina (St. Petersburg). Designer and Coordinator of the study, design, engineering, construction, production, testing and installation of all the Front-End and Back-End electronic systems of the T1 telescope, synthetically listed:

Data acquisition system, based on custom VFAT/TOTEM chip, parallel to serial transmission on optical fiber and VME protocol Back-End cards.

First level trigger system (LV1), generation and transmission of primitives on optical fiber, reconstruction of tracks in VME protocol Back-End custom boards.

Distribution on fiber optic to the DAQ system of the Fast Command signals of the LHC collider. Slow Control system (T, P, H sensors) consisting of the Detector Control System and Detector Safety System.

Grounding and Shielding System.

All systems make constant use of programmable digital devices such as FPGAs and microprocessors.

All systems are integrated and comply with the standards and protocols of the CMS experiment.

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from **01-06-2006** to **31-12-2021**

**Permanent member of the Technical Board of the TOTEM experiment**

Technical coordination of the T1 telescope

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from **01-06-2006** to **31-12-2021**

**Member of the Collaboration Board of the TOTEM experiment**

Technical coordination of the T1 telescope

- 
- Date (from – to)
  - Name and address of the collaborating institution
  - Type of application
  - Main tasks and responsibilities

from **2008** to **2010**

INFN & Università degli Studi di Genova - Dipartimento di Fisica

**PRIN Project: Development of Large Micro Gas Pattern Detectors (GEM) for applications in High Energy Physics and beyond.**

Stand-alone DAQ board development technical coordinator.

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from **01-04-2008** to **01-09-2009**

**Designer DAQ BoNus experiment installed at JLAB (USA)**

Coordination and Design of the DAQ system of the cylindrical GEM detector.

The DAQ system is based on the FEC and RCU boards developed at CERN for the ALICE experience.

The ALICE system has been adapted to BoNus needs by increasing the Bit Rate, developing new Backplane and FEC/RCU Carriers boards, and rewriting the FPGA firmware optimizing the Event Builder dead time

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from **2008** to **2012**

**NEMO and KM3NET experiment designer**

Study of a high-speed differential data transmission system on a copper twisted pair.

Design of a high voltage (2kV max) and low consumption power supply for 4 quadrant photomultiplier detectors.

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from **01-09-2006** to **01-05-2007**

**Designer MEG experiment, installed at PSI (CH)**

Designer of a discrete component Front-End for APD detectors.

High gain FET preamplifier stage, fast discriminator and remote threshold control through Half-Duplex connection with I2C protocol.

- Date (from – to)
- Type of application
- Main tasks and responsibilities

from 1995 to 2006

**DAQ designer for BaBar experiment installed at SLAC (USA)**

Designer and Coordinator of the study, design, engineering, construction, production, testing and installation of IFR detector electronic systems (RPC and LST detectors), briefly listed: Data acquisition system Controller Board (ICC), serial to parallel transmission on optical fiber and synchronous high-speed single ended Full-Duplex backplane.

First level Trigger Board (TRG), primitive generation and tracks search.

Slow Control Board (CSC) with remote control via Web-EPICS interface, for monitoring and programming of sensitive parameters for data acquisition and triggering, based on CAN-BUS protocol.

96 channels TDC card based on custom TDC32 chip developed at CERN.

Pseudo-random generator card (LFSR algorithm) with 96 channels for testing the TDC card.

Crate and relative controller (at CAEN) to host the Trigger and Slow Control system boards.

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from 1992 to 1995

**Designer PS202 experiment, installed at CERN (CH)**

Design of a Front-End for silicon strip detectors, based on custom ICAR chips developed at CERN.

Development of an innovative rigid-flexible printed circuit board (kapton - FR4).

Design of an adjustable high voltage power supply (1kV max) for silicon detectors.

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from 1988 to 1993

**DAQ Designer, experiment E385 installed at FERMILAB (USA)**

Design of the data acquisition system, VME compliant, of a barrel composed of a double layer of silicon detectors.

Design of a Front-End for silicon strip detectors, based on custom AMPLEX chips developed at CERN.

- 
- Date (from – to)
  - Type of application
  - Main tasks and responsibilities

from 1985 to 1988

**Electronic Designer, E760 experiment installed at FERMILAB (USA)**

Design of a Limited Tube Streamer (LST) detector preamplifier stage.

Design of a High Voltage (8kV) distribution and monitoring system adapted to a commercial multi-channel generator (NES).

**TEACHING ACTIVITIES**

- 
- Date (from – to)
  - Name and address of the collaborating institution
  - Type of application

Academic year 2022 / 2023

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**contract Professor, course " Electronics and Data Acquisition ", PhD in Physics, cycle XXXVIII**

- 
- Date (from – to)
  - Name and address of the collaborating institution
  - Type of application

Academic year 2022 / 2023

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**contract Professor, course " Elettronica Applicata ", master's degree in physics**

- 
- Date (from – to)
  - Name and address of the collaborating institution
  - Type of application

Academic year 2021 / 2022

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**contract Professor, course " Electronics and Data Acquisition ", PhD in Physics, cycle XXXVII**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

Academic year 2021 / 2022

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**contract Professor, course " Elettronica Applicata ", master's degree in physics**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

**February 2022**

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**Nominated electronic subject matter expert.**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

Academic year 2014 / 2015

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**Lecturer course " Electronics and data acquisition ", students PhD in Physics, cycle XXX.**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

Academic year 2013 / 2014

Universita' degli Studi di Genova - Dipartimento di Fisica – via Dodecaneso 33, 16146, GENOVA

**Lecturer course " Electronics and data acquisition ", students PhD in Physics, cycle XXIX.**

## REVIEWER ACTIVITIES

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

March 2023

Istituto Nazionale Fisica Nucleare

**Member of the Selection Board for the competition for a technical position referred to in Notice No. GE/25059**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

February 2023

LHCb RICH experiment steering committee

**Convener: RICH upgrade for RUN4, "Elementary Cell ++"**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

February 2023

LHCb RICH experiment steering committee

**Convener: RICH upgrade for RUN4, "EC ++ and Electronics interfaces"**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

November 2022

DarkSide-20k experiment steering committee

**Review Panel: Final Design Review for the "DarkSide-20k Photon Detector Unit"**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

May 2021

Km3Net experiment steering committee

**Review Panel: Product Readiness Review for the "KM3NeT Base Module Units"**

- Date (from – to)
- Name and address of the collaborating institution
- Type of application

February 2021

Istituto Nazionale Fisica Nucleare

**Member of the Selection Board for the competition for a Technologist position referred to in Notice No. GE/T3/22691**



- Date (from – to)
- Name and address of the collaborating institution
- Type of application

May 2020  
Km3Net experiment steering committee

**Review Panel: Product Readiness Review for the “*KM3NeT Calibration Units*”**

- 
- Date (from – to)
  - Name and address of the collaborating institution
  - Type of application

October 2014  
LHCb experiment steering committee

**Review Panel: Engineering Design Review for the “*Elementary Cell of the RICH photodetector*”**

## SCIENTIFIC AFFILIATION

<ul style="list-style-type: none"><li>• Date (from – to)</li><li>• Name and address of the collaborating institution</li><li>• Type of application</li><li>• Main tasks and responsibilities</li></ul>	<p>from <b>01-01 2013</b> to <b>31-03- 2013</b> European Organization for Nuclear Research (CERN - Geneva)</p> <p><b>Associated Member of the Personnel (Scientific Associate)</b> Shift Leader, Detector Expert Leader of the T1 telescope of the TOTEM experiment</p>
<ul style="list-style-type: none"><li>• Date (from – to)</li><li>• Name and address of the collaborating institution</li><li>• Type of application</li><li>• Main tasks and responsibilities</li></ul>	<p>from <b>01-0702012</b> to <b>31-122012</b> European Organization for Nuclear Research (CERN - Geneva)</p> <p><b>Associated Member of the Personnel (Paid Associate)</b> Shift Leader, Detector Expert Leader of the T1 telescope of the TOTEM experiment</p>

## PATENTS

<ul style="list-style-type: none"><li>▪ IT201800005561A1; WO2019224693A1</li></ul>	“Method for teeth cleaning by means of a composition in the form of powder based on Hydroxyapatite”
<ul style="list-style-type: none"><li>▪ IT102019000014556</li></ul>	“Assieme inserto con identificatore a radiofrequenza per dispositivo medicale”.
<ul style="list-style-type: none"><li>▪ IT102019000014559</li></ul>	“Assieme inserto con identificatore a radiofrequenza”.
<ul style="list-style-type: none"><li>▪ IT102019000014565</li></ul>	“Assieme manipolo per dispositivo medicale”

## SCIENTIFIC PAPERS

<ul style="list-style-type: none"><li>▪ List available</li></ul>	Co-author of about 100 publications in international journals
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## TRAINING

<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	February 2023 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Formazione manageriale di secondo livello"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	April 2022 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Introduzione alle reti neurali ed applicazioni sui dispositivi elettronici"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	March 2022 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Formazione manageriale di primo livello"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	October 2021 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Project Management"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	June 2021 Istituto Italiano della saldatura <b>Training Course</b> "Dirigenti alla Sicurezza"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	June 2021 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Formazione Referenti Trasferimento Tecnologico"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	June 2021 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Gas compressi e bombole"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	April 2021 Istituto Italiano della saldatura <b>Training Course</b> "I difetti dei PCB"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	April 2021 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "La salvaguardia della Proprietà Intellettuale e del Diritto d'Autore"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	March 2021 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Ciclo di gestione della performance"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	Febbraio 2021 Associazione Italiana di Scienza e Tecnologia <b>Training Course</b> "Corso Avanzato di Vuoto: Ricerca delle Perdite e cenni all'Ultra-Alto Vuoto"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	December 2020 Istituto Nazionale Fisica Nucleare <b>Training Course</b> "Corso di Formazione Rischio Criogenia"
<ul style="list-style-type: none"><li>• Date</li><li>• Organization providing training</li><li>• Main subjects / professional skills</li></ul>	October - December 2020 Mentor Graphics <b>Training Course</b> "Xpedition Flow Schematic + Layout"
<ul style="list-style-type: none"><li>• Date</li></ul>	May 2020

- Organization providing training
- Main subjects / professional skills

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- Organization providing training
- Main subjects / professional skills

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- Organization providing training
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- Organization providing training
- Main subjects / professional skills

• Date

- Organization providing training

Accademia Eraclitea

**Training Course** "Formazione per Rischio laser"

May 2020

Istituto Nazionale Fisica Nucleare

**Training Course** "Corso di WORD - I livello"

April 2020

Istituto Nazionale Fisica Nucleare

**Training Course** "Corso di EXCEL - BASE"

April 2020

Istituto Nazionale Fisica Nucleare

**Training Course** "Corso introduttivo Mentor Expedition"

April 2020

Istituto Nazionale Fisica Nucleare

**Training Course** "Sicurezza informatica - BASE"

October 2019

Istituto Nazionale Fisica Nucleare

**Training Course** "Gestione del personale disabile"

May 2017

RINA Academy

**Training Course** "Project Management: strumenti"

May 2017

RINA Academy

**Training Course** "Project Management: gestione economica"

September 2018

PLASTICS Academy

**Training Course** "Progettazione manufatti in materie plastiche"

May 2014

Istituto Nazionale Fisica Nucleare

**Training Course** "Designing with ALTERA SoC"

November 2013

Istituto Nazionale Fisica Nucleare

**Training Course** "Data Driven FEE for time and energy measurement"

April 2013

ALTERA

**Training Course** "VEC 104, Altera NIOS II Processor"

June 2012

Istituto Nazionale Fisica Nucleare

**Training Course** "New-PWA Tools for next generation experiments"

October 2010

Istituto Nazionale Fisica Nucleare

**Training Course** "Progettazione Digitale VLSI"

April 2010

ALTERA

• Main subjects / professional skills

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• Organization providing training  
• Main subjects / professional skills

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• Organization providing training  
• Main subjects / professional skills

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• Main subjects / professional skills

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• Organization providing training  
• Main subjects / professional skills

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• Date

• Organization providing training  
• Main subjects / professional skills

**Training Course** "Altera Quartus II Timing Analysis"

December 2009

Istituto Nazionale Fisica Nucleare

**Training Course** "Tecniche innovative di rivelazione particelle"

October 2007

Istituto Nazionale Fisica Nucleare

**Training Course** "Integrità dei segnali nelle moderne schede elettroniche"

September 2006

Istituto Nazionale Fisica Nucleare

**Training Course** "Qualità e Progettazione di sistema per esperimenti Fisica nello spazio"

May 2006

Istituto Italiano della Saldatura

**Training Course** "Saldatura in elettronica, leghe senza piombo"

April 2006

ESPERAN - CADENCE

**Training Course** "C++ & System C"

November 2005

Istituto Nazionale Fisica Nucleare

**Training Course** "Introduzione al Bus industriale VME"

June 1999

CADENCE

**Training Course** "Concept HDL Front to Back"

## PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE	<b>ITALIAN</b>
OTHER LANGUAGE	<b>ENGLISH</b> EXCELLENT EXCELLENT EXCELLENT
<ul style="list-style-type: none"><li>• Reading skills</li><li>• Writing skills</li><li>• Oral expression skills</li></ul>	<b>FRENCH</b> INTERMEDIATE BASIC INTERMEDIATE
<ul style="list-style-type: none"><li>• Reading skills</li><li>• Writing skills</li><li>• Oral expression skills</li></ul>	
INTERPERSONAL SKILLS AND COMPETENCES	EXCELLENT INTERPERSONAL AND INTEGRATION SKILLS WITH WORKING GROUPS IN ORDER TO ACHIEVE AN OBJECTIVE. THE LONG PERIOD OF WORK IN MULTINATIONAL COMPANIES AND SCIENTIFIC RESEARCH, ITS CHARACTERISTIC MULTI-ETHNICITY AND DIVERSITY OF IDEAS AND OPINIONS, HAS STRONGLY CONTRIBUTED TO THIS ASPECT. THE COLLABORATION, COORDINATION, POSITION-TAKING AND CRITICAL ASPECT OF EACH CHOICE HAS CONTRIBUTED TO THE DEVELOPMENT OF AN EXCELLENT RELATIONAL ABILITY AND COMPETENCE.
ORGANIZATIONAL SKILLS AND COMPETENCES	EXCELLENT SKILLS OF ANALYSIS AND SYNTHESIS OF A PROJECT, WHICH CONTRIBUTE TO A CLEAR VISION OF THE CRITICAL POINTS AND ALLOW TO ASSIGN SPECIFIC ROLES AND SKILLS TO THE NEED. A LOT OF ATTENTION, ESPECIALLY IN THE INITIAL PHASES OF COORDINATION AND ADMINISTRATION OF A PROJECT, IS DEDICATED TO THE EVALUATION OF COSTS, AND TO LEARNING AND PREPARATION TIMES IN LINE WITH THE PERSONAL CHARACTERISTICS AND NEEDS OF THE COLLABORATORS. EXCELLENT ORGANIZER OF EMPLOYEE WORK, TEAM BUILDING, PROJECT BREAKDOWN, GANTT AND WORK PROGRESS. EXCELLENT PROBLEM-SOLVING SKILLS.
TECHNICAL SKILLS AND COMPETENCES	<b>SECTOR:</b> FAST PROGRAMMABLE ANALOGUE AND DIGITAL DATA ACQUISITION SYSTEMS. PROGRAMMABLE CONTROL AND MONITORING SYSTEMS FOR LOW SPEED SENSORS. PROGRAMMABLE EMBEDDED AND SOC. DIGITAL OPTICAL TRANSMISSION SYSTEMS. DIGITAL IMAGE RECOGNITION AND FILTERING SYSTEMS. MEDICAL EQUIPMENT FOR DENTAL SURGERY, DENTAL PROPHYLAXIS, ENT, MAXILLOFACIAL, SKULL, SPINE.  <b>TECHNICAL CAPABILITIES:</b> COORDINATION OF THE INSTALLATION OF AN EXPERIMENTAL APPARATUS. ORGANIZATION AND MANAGEMENT OF THE DEVELOPMENT AND TEST LABORATORY FOR HARDWARE PROJECTS. COORDINATION OF SOFTWARE AND FIRMWARE DEVELOPMENT ACTIVITIES. SIZING AND EVALUATION OF THE DESIGN PROBLEMS OF AN ELECTRONIC SYSTEM. SIZING AND EVALUATION OF DESIGN PROBLEMS OF A MECHATRONIC SYSTEM. PRECISION MECHANICS, PNEUMATICS AND HYDRAULICS. PLASTIC AND METAL MOLDING. METAL SINTERING TECHNIQUES, DML/SLM TECHNOLOGIES, TITANIUM T16Al4V, STAINLESS STEEL AISI 316L.

**TECHNICAL SKILLS:**

DESIGN AND PROGRAMMING OF ELECTRONIC DEVICES: FPGA, DSP, uC, uP;  
DESIGN AND PROGRAMMING SW-FW: C, C++; ASM, VHDL, VERILOG.  
SERIAL COMMUNICATION PROTOCOLS: RS232, RS485, RS422, I2C, SPI, UART, ONEWIRE, CAN-BUS, MODBUS, USB;  
INDUSTRIAL DATA ACQUISITION PROTOCOLS: VME32, VME64, VME64X, MODBUS;  
BASIC KNOWLEDGE OF PROTOCOLS: IP, ZIGBEE, BLUETOOTH;  
INDUSTRIAL CONTROL ALGORITHMS: PWM, PID;  
DIGITAL IMAGE FILTERING ALGORITHMS: SOBEL – CANNY.  
KNOWLEDGE OF ULTRASONIC POWER SYSTEMS.  
KNOWLEDGE 2D/3D MECHANICAL DESIGN, FEM MODELLING.

**CAE/CAD DEVELOPMENT TOOLS USED:**

ALTERA: QUARTUS II ANALYSIS AND SYNTHESIS OF HDL DESIGNS.  
XILINX: ISE HDL DESIGN SUITE, EDK PLATFORM STUDIO.  
CYPRESS: WARP HDL DESIGN.  
ISYSTEM: WINIDEA uCONTROLLER IDE AND DEBUGGER ENVIRONMENT.  
CADENCE: ORCAD SCHEMATIC ENTRY, LAYOUT.  
ALTIUM DESIGNER.  
CADENCE: PSpICE EDITOR AND AD SIMULATOR.  
CADENCE: HDL, CONCEPT, ALLEGRO PCB DESIGN.  
SYNOPSYS: DESIGN IC COMPILER  
MENTOR GRAPHICS: FPGA ADVANTAGE, XPEDITION, HDL DESIGN, HYPERLYNX, SIGNAL INTEGRITY DESIGN SIMULATION AND ANALYSIS, MODEL SIM.  
MIKROELEKTRONIKA: PIC32 EDK, dsPIC EDK.

**COMPUTER AND MANAGEMENT SKILLS:**

GOOD KNOWLEDGE OF OPERATING SYSTEMS: LINUX, UNIX, WINDOWS NT/2000/XP/7  
GOOD KNOWLEDGE OF PROGRAMMING LANGUAGES: C, C++, VHDL, VERILOG, ASSEMBLER INTEL 80CXX E MOTOROLA 68HCXX.  
GOOD KNOWLEDGE OF DEVELOPMENT ENVIRONMENTS: MICROSOFT VISUAL STUDIO E VISUALBASIC, LABVIEW, MATLAB.  
GOOD KNOWLEDGE OF MICROSOFTS'S OFFICE PACKAGE: WORD, EXCEL, POWERPOINT, ACCESS, OUTLOOK, PROJECT.  
BASIC KNOWLEDGE OF: AUTOCAD INVENTOR, SOLIDWORKS, COMSOL MULTIPHYSICS, HTML, PYTHON, ROOT.  
MES (MANUFACTURING EXECUTION SYSTEM): IT SOLUTION BUILT AROUND THE FACTORY THAT COVERS ALL PRODUCTION NEEDS.  
MICROSOFT DYNAMICS® NAV: MODULAR ERP (ENTERPRISE RESOURCE PLANNING) MANAGEMENT SOLUTION, INTEGRATES THE AUTOMATION OF BUSINESS PROCESSES.  
TEAMGANTT: ONLINE PROJECTS SCHEDULE SOFTWARE.  
STAGE&GATE: INDUSTRY STANDARD FOR THE MANAGEMENT OF INNOVATIVE PRODUCT PROCESSES.

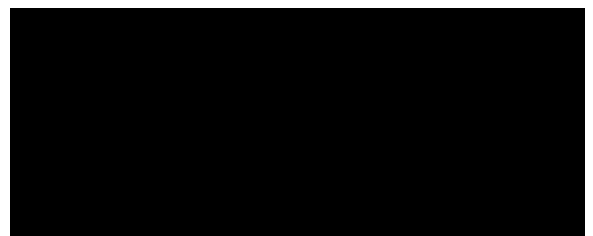
LICENSE OR LICENSES

Car, type B license

**FURTHER INFORMATION**

For further information regarding training and/or work experience please contact me at the e-mail or telephone numbers indicated at the beginning of this document.

I hereby authorize the processing of my personal data in accordance with art.13 of Legislative Decree 196/2003 and art.13 of EU Regulation 2016/679.

Genoa, 28<sup>th</sup> April 2023

## List of Publications

- First Search for Exclusive Diphoton Production at High Mass with Tagged Protons in Proton-Proton Collisions at  $\sqrt{s}=13$  TeV  
(2022) Physical Review Letters, 129 (1), art. no. 011801
- Characterisation of the dip-bump structure observed in proton–proton elastic scattering at  $\sqrt{s}=8$  TeV  
(2022) European Physical Journal C, 82 (3), art. no. 263
- Odderon Exchange from Elastic Scattering Differences between pp and  $p(\bar{p})$  Data at 1.96 TeV and from pp Forward Scattering Measurements  
(2021) Physical Review Letters, 127 (6), art. no. 062003
- Hard color-singlet exchange in dijet events in proton-proton collisions at  $\sqrt{s}=13$  TeV  
(2021) Physical Review D, 104 (3), art. no. 032009
- Erratum to: Measurement of single-diffractive dijet production in proton–proton collisions at  $\sqrt{s}=8$  TeV with the CMS and TOTEM experiments (The European Physical Journal C, (2020), 80, 12, (1164), 10.1140/epjc/s10052-020-08562-y)  
(2021) European Physical Journal C, 81 (5), art. no. 383
- Measurement of single-diffractive dijet production in proton–proton collisions at  $\sqrt{s}=8$  TeV with the CMS and TOTEM experiments  
(2020) European Physical Journal C, 80 (12), art. no. 1164
- Elastic differential cross-section  $d\sigma/dt$  at  $\sqrt{s}=2.76$  TeV and implications on the existence of a colourless C-odd three-gluon compound state  
(2020) European Physical Journal C, 80 (2), art. no. 91
- Elastic differential cross-section measurement at  $\sqrt{s}=13$  TeV by TOTEM  
(2019) European Physical Journal C, 79 (10), art. no. 861
- First determination of the  $\rho$  parameter at  $\sqrt{s}=13$  TeV: probing the existence of a colourless C-odd three-gluon compound state: TOTEM Collaboration  
(2019) European Physical Journal C, 79 (9), art. no. 785
- First measurement of elastic, inelastic and total cross-section at  $\sqrt{s}=13$  TeV by TOTEM and overview of cross-section data at LHC energies: TOTEM Collaboration  
(2019) European Physical Journal C, 79 (2), art. no. 103
- A radial time projection chamber for  $\alpha$  detection in CLAS at JLab  
(2018) Nuclear Instruments and Methods in Physics Research, Section A: Accelerators
- Observation of proton-tagged, central (semi)exclusive production of high-mass lepton pairs in pp collisions at 13 TeV with the CMS-TOTEM precision proton spectrometer  
(2018) Journal of High Energy Physics, 2018 (7), art. no. 153
- Upgrade of the compact neutron spectrometer for high flux environments  
(2018) Nuclear Instruments and Methods in Physics Research, Section A: Accelerators
- Diamond detectors for the TOTEM timing upgrade  
(2017) Journal of Instrumentation, 12 (3), art. no. P03007