

Scientific and Academic Curriculum

Luca Ghislotti

UNIVERSITÀ DEGLI STUDI DI BERGAMO

Department of Engineering and Applied Sciences
Microelectronics Laboratory

Bio

I am a Computer Engineer and Research Fellow at the Istituto Nazionale di Fisica Nucleare (INFN, National Institute for Nuclear Physics), Sezione di Pavia, working within the CSN2 particle physics division. I obtained my Ph.D. in Engineering and Applied Sciences (Microelectronics for High-Energy Physics) at the Microelectronics Laboratory, Department of Engineering and Applied Sciences, University of Bergamo.

My research focuses on the design and characterization of low-noise, low-power analog integrated circuits for the readout of silicon detectors used in high-energy physics and astrophysics experiments.

I am currently contributing to the General AntiParticle Spectrometer (GAPS) Antarctic balloon experiment as part of the GAPS collaboration. GAPS is a NASA-, JAXA-, INFN-, and ASI-funded project designed to precisely measure the flux of low-energy cosmic-ray antideuterons, antiprotons, and antihelium as an indirect signature of dark matter.



Personal Details

Place and Date of Birth: Treviglio (BG), 03/02/1998

Personal Email Address: ghislottiluca@gmail.com

Academic Email Address: luca.ghislotti@unibg.it

GitHub: <https://github.com/lucaghisl>

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Personal Web Page: <https://lucaghislotti.com>

Laboratory Web Page: <https://microlab.unibg.it/>

Current Employment

Research Fellow

Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Pavia, Italy (Dec. 2025 – Present)

Grant: INFN Research Fellowship, Call No. 28012/2025

Selection Score: 200/200 (60/60 CV evaluation, 140/140 interview)

Research Title: “Design and characterization of an analog channel in 65 nm CMOS technology for the readout of the Si(Li) detectors of the GAPS experiment”

Academic Education and Training

Doctor of Philosophy (Ph.D.) - Engineering and Applied Sciences (XXXVIII cycle)

SSD: IINF-01/A - Electronics (Microelectronics for High Energy Physics)

Università degli Studi di Bergamo, Bergamo (2022 – 2026)

Thesis: “Design, Testing and Calibration of the GAPS Experiment Si(Li) Tracker Readout ASIC: From the First Flight Campaign Toward the Second Mission Upgrade”

Supervisor: Prof. Massimo Manghisoni

Co-Supervisor: Dr. Elisa Riceputi

Ph.D. Coordinator: Prof. Alessandra Marini

Keywords: ASIC, Silicon Detectors, Readout Electronics, CMOS Technology, Dark Matter

Defense Date: January 28, 2026

Evaluation: Excellent

Link: <https://hdl.handle.net/10446/319848>

Research Associate II at Columbia University

Astrophysics Laboratory - Columbia University, New York (August 1, 2023 – July 31, 2024)

Master of Science (M.Sc.) - Computer Engineering (LM-32)

Università degli Studi di Bergamo, Bergamo (2020 - 2022)

Thesis: “Characterization of the readout electronics of the Si(Li) tracker for the first flight of the GAPS experiment” [PDF]

Supervisor: Prof. Massimo Manghisoni

Keywords: GAPS, Dark Matter, Spectrometer, Si(Li), ASIC

Final Grade: 110/110 cum laude

Link: <https://hdl.handle.net/10446/303265>

Bachelor of Science (B.Sc.) - Computer Engineering (LM-8)

Università degli Studi di Bergamo, Bergamo (2017 – 2020)

Thesis: “Data Anonymization Techniques: Implementation in the Apache Spark Environment”

Supervisor: Prof. Stefano Paraboschi

Keywords: Data Anonymization, Apache Spark, Apache Hadoop, Privacy, Computer Security

Final Grade: 107/110

Secondary School Diploma - IT and Telecommunications Engineering

Centro Studi Leonardo da Vinci, Bergamo (2012 – 2017).

Final Project: “Where’s my car? Sistema di localizzazione GPS”

Final Grade: 100/100

Scholarships and Certificates

Ph.D. Scholarship: Doctoral Fellowship in Engineering and Applied Sciences (Cycle XXXVIII), Università degli Studi di Bergamo
Years: 2022–2025

TOP 10 Student Program: Università degli Studi di Bergamo Fee exemption award issued to the best students.
Years: 2017–2018, 2020–2021, 2021–2022

Excellence Award (Io e Lode): Confindustria Bergamo Award for outstanding upper secondary school students.
Years: 2013–2017

FCE (B2 First Certificate): Cambridge Assessment English, Cambridge
Certified in 2017

Memberships

INFN Member: Istituto Nazionale di Fisica Nucleare, CSN2 group (Technological Ph.D., Pavia section)
Years: 2022–2026

IEEE Student Member: IEEE - Nuclear and Plasma Sciences Society
Membership number 97046986
Years: 2023–2026

SIE Member: Società Italiana di Elettronica
Years: 2023–2026

Research Profiles

ORCID: 0000-0002-7084-5979

Scopus: 57939698700

Web of Science: JUU-2100-2023

ADS: ADS Author Profile

Semantic Scholar: L. Ghislotti

Google Scholar: Luca Ghislotti

ResearchGate: Luca Ghislotti

Scientific Activity

The research activity of Luca Ghislotti focuses mainly on the design of low-noise, low-power analog front-end integrated circuits for semiconductor detector readout in high-energy physics, and their experimental characterization. Since 2022 he has been a member of the GAPS collaboration with affiliations to the University of Bergamo and INFN Pavia (<https://gaps1.astro.ucla.edu/gaps/people.php>).

The main research topics to date include:

1. 65 nm CMOS readout ASIC for the second GAPS Si(Li) tracker flight

Design of a new Application-Specific Integrated Circuit (ASIC) for the second long-duration balloon flight of the GAPS experiment. The chip is an evolution of the current SLIDER32 ASIC (180 nm CMOS), migrating to a 65 nm CMOS technology to achieve improved noise, dynamic range, and integration density. The flight is scheduled to launch from McMurdo Station, Antarctica, in late 2025.

2. Characterization and calibration of the Si(Li) tracker electronics

Validation of the flight-ready readout electronics of the GAPS Si(Li) tracker, with calibration campaigns focused on ultra-low noise performance and accurate detection of high-energy particles. These activities supported the integration of the instrument for the Antarctic long-duration balloon campaign scheduled for late 2024.

3. Radiation-hard bandgap references

Characterization of bandgap voltage references for high-radiation environments, including devices developed for the ARCADIA project and a 28 nm CMOS bandgap for high-energy physics applications. *Related work:* G. Traversi, D. Falchieri, L. Gaioni, M. Manghisoni, M. Pezzoli, L. Ratti, V. Re, L. Ghislotti, “A radiation hard bandgap voltage reference for the ARCADIA project”, TWEPP 2022, Bergen, Norway.

4. DSSC bare module testing for the European XFEL

Characterization of bare detector modules consisting of pixelated sensors bump-bonded to readout ASICs, within the DSSC (DEPFET Sensors with Signal Compression) project for the European XFEL in Hamburg. The aim is the development of a MiniSDD-based 1-Megapixel camera for photon science in the 0.25–6 keV energy range.

Related contracts:

- “*Validazione dei sensori di 10 Large Format Bare Module per l’allestimento della seconda DSSC camera dell’esperimento XFEL*” nell’ambito del progetto di ricerca “*Large format x-ray imager with mega-frame readout capability*” (April 2025).
- “*Validazione dei sensori di 15 Large Format Bare Module per l’allestimento della seconda DSSC camera dell’esperimento XFEL*” nell’ambito del progetto di ricerca “*Large format x-ray imager with mega-frame readout capability*”, specifically focused on the measurement of the back-side current of DEPFET sensors as a function of the applied bias voltage (October 2025).

5. Wearable device for medical applications

Development of a microcontroller-based wearable system for monitoring arteriovenous fistulas in dialysis patients, in collaboration with Istituto di Ricerche Farmacologiche Mario Negri IRCCS.

6. Gas sensors for air quality monitoring

Analysis and characterization of gas sensors for the development of artificial intelligence algorithms able to recognize complex odor signatures and monitor air quality, in collaboration with the University of Brescia.

Journal Articles

Peer-reviewed journal publications in the fields of microelectronics, detector instrumentation, and high-energy physics applications.

- [1] L. Volpicelli and on behalf of the GAPS Collaboration, “New indirect searches of Dark Matter with the GAPS experiment,” *Il Nuovo Cimento C*, vol. 49, no. 1-2, pp. 1–6, Jan. 2026, ISSN: 03905551, 03905551. DOI: [10.1393/ncc/i2026-26006-7](https://doi.org/10.1393/ncc/i2026-26006-7)
- [2] L. Ghislotti, P. Lazzaroni, M. Manghisoni, and E. Riceputi, *Design of the ANTARES4 Readout ASIC for the Second Flight of the GAPS Experiment: Motivations and Requirements*, Oct. 2025. DOI: [10.20944/preprints202510.0181.v1](https://doi.org/10.20944/preprints202510.0181.v1) Preprints: 2025100181.
- [3] L. Ghislotti, P. Lazzaroni, M. Manghisoni, and E. Riceputi, “Design of the ANTARES4 Readout ASIC for the Second Flight of the GAPS Experiment: Motivations and Requirements,” *Particles*, vol. 8, no. 4, p. 89, Dec. 2025, ISSN: 2571-712X. DOI: [10.3390/particles8040089](https://doi.org/10.3390/particles8040089)
- [4] M. Manghisoni, L. Ghislotti, P. Lazzaroni, V. Re, E. Riceputi, L. Ratti, L. Fabris, M. Boezio, G. Zampa, and M. Xiao, “X-ray and Particle Detection with the Si(Li) Tracker Module of the GAPS Experiment,” *IEEE Transactions on Nuclear Science*, pp. 1–1, 2025, ISSN: 1558-1578. DOI: [10.1109/TNS.2025.3616408](https://doi.org/10.1109/TNS.2025.3616408)
- [5] G. Traversi, R. Ballabriga, D. Ceresa, L. Gaioni, L. Ghislotti, S. Michelis, and G. Wegrzyn, “A 1 Grad TID-Tolerant Bandgap Voltage Reference for HEP applications in 28 nm CMOS node,” *IEEE Transactions on Nuclear Science*, pp. 1–1, 2025, ISSN: 1558-1578. DOI: [10.1109/TNS.2025.3649520](https://doi.org/10.1109/TNS.2025.3649520)
- [6] S. Botticini et al., “Index Air Quality Monitoring for Light and Active Mobility,” *Sensors*, vol. 24, no. 10, p. 3170, Jan. 2024, ISSN: 1424-8220. DOI: [10.3390/s24103170](https://doi.org/10.3390/s24103170)
- [7] L. Ghislotti, M. Boezio, L. Fabris, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, E. Riceputi, and G. Zampa, “Energy threshold calibration of the GAPS experiment Si(Li) tracker readout electronics,” *Il Nuovo Cimento C*, vol. 47, no. 3, pp. 1–5, Apr. 2024, ISSN: 03905551, 03905551. DOI: [10.1393/ncc/i2024-24121-1](https://doi.org/10.1393/ncc/i2024-24121-1)
- [8] M. Verzeroli, L. Gaioni, A. Galliani, L. Ghislotti, P. Lazzaroni, and V. Re, “Advancing Sustainable Mobility: A Data Acquisition System for Light Vehicles and Active Mobility,” *Electronics*, vol. 13, no. 21, p. 4249, Jan. 2024, ISSN: 2079-9292. DOI: [10.3390/electronics13214249](https://doi.org/10.3390/electronics13214249)
- [9] M. Manghisoni, L. Ghislotti, P. Lazzaroni, V. Re, E. Riceputi, L. Ratti, L. Fabris, M. Boezio, and G. Zampa, “A 32-channels readout ASIC for x-ray spectrometry and tracking in the GAPS experiment,” *IEEE Transactions on Nuclear Science*, 2023.
- [10] V. Re, L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi, L. Ratti, M. Boezio, G. Zampa, and L. Fabris, “A mixed-signal processor for x-ray spectrometry and tracking in the GAPS experiment,” *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 1045, p. 167 617, Jan. 2023, ISSN: 0168-9002. DOI: [10.1016/j.nima.2022.167617](https://doi.org/10.1016/j.nima.2022.167617)

Conference Proceedings

Publications in international conference proceedings related to particle physics instrumentation, ASIC design, and detector systems.

- [1] K. Aoyama and on behalf of the GAPS Collaboration, “GAPS Detector Cooling System: Results from Antarctic Ground Tests,” in *Proceedings of 39th International Cosmic Ray Conference — PoS(ICRC2025)*, vol. 501, SISSA Medialab, Sep. 2025, p. 466. DOI: 10.22323/1.501.0466
- [2] M. Manghisoni, L. Ghislotti, P. Lazzaroni, L. Ratti, V. Re, and E. Riceputi, “DTMOS Feedback Network for Dynamic Signal Compression in Low-Noise Charge Amplifier,” in *2025 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD)*, Nov. 2025, pp. 1–1. DOI: 10.1109/NSS/MIC/RTSD57106.2025.11286312
- [3] A. Stoessl and on behalf of the GAPS Collaboration, “Estimating the performance of the GAPS detector with muon ground testing data from Antarctica,” in *Proceedings of 39th International Cosmic Ray Conference — PoS(ICRC2025)*, vol. 501, SISSA Medialab, Dec. 2025, p. 531. DOI: 10.22323/1.501.0531
- [4] A. Tiberio for the GAPS Collaboration, “Indirect search for dark matter with cosmic-ray antinuclei: The GAPS experiment,” *J. Phys.: Conf. Ser.*, vol. 3053, no. 1, p. 012 002, Jul. 2025, ISSN: 1742-6596. DOI: 10.1088/1742-6596/3053/1/012002
- [5] K. Yee and on behalf of the GAPS Collaboration, “Antinuclei Signatures of Dark Matter and the GAPS Experiment,” in *Proceedings of 39th International Cosmic Ray Conference — PoS(ICRC2025)*, vol. 501, SISSA Medialab, Sep. 2025, p. 539. DOI: 10.22323/1.501.0539
- [6] S. N. Feldman et al., “The GAPS time-of-flight detector,” in *Proceedings of 38th International Cosmic Ray Conference — PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, p. 120. DOI: 10.22323/1.444.0120
- [7] L. Ghislotti, P. Lazzaroni, M. Manghisoni, and E. Riceputi, “Low-noise wide dynamic range charge sensitive amplifier in 65 nm CMOS technology for the second flight of the GAPS experiment,” in *Proc. 19th Conf. Ph.D. Res. Microelectron. Electron. (PRIME)*, 2024, Jun. 2024, pp. 1–4. DOI: 10.1109/PRIME61930.2024.10559720
- [8] R. Munini, A. Lenni, and on behalf of the GAPS Collaboration, “The identification of the cosmic-ray light nuclei with the GAPS experiment,” in *Proceedings of 38th International Cosmic Ray Conference — PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, p. 179. DOI: 10.22323/1.444.0179
- [9] R. Munini and on behalf of the GAPS Collaboration, “Integration and Calibration of the GAPS Antarctic Balloon Payload,” in *Proceedings of 38th International Cosmic Ray Conference — PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, p. 180. DOI: 10.22323/1.444.0180
- [10] A. Stoessl and on behalf of the GAPS Collaboration, “The GAPS experiment - a search for light cosmic ray antinuclei,” in *Proceedings of 38th International Cosmic Ray Conference — PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, p. 1440. DOI: 10.22323/1.444.1440

- [11] M. Verzeroli, A. Galliani, L. Ghislotti, L. Gaioni, P. Lazzaroni, and V. Re, “Empowering Smart Mobility with a Component-based Data Acquisition System for Multi-sensor Readout,” in *2024 19th Conference on Ph.D Research in Microelectronics and Electronics (PRIME)*, Jun. 2024, pp. 1–4. DOI: [10.1109/PRIME61930.2024.10559671](https://doi.org/10.1109/PRIME61930.2024.10559671)
- [12] T. Aramaki et al., “GAPS contributions to the 38th International Cosmic Ray Conference (Nagoya 2023),” 2023. DOI: [10.48550/ARXIV.2310.10181](https://doi.org/10.48550/ARXIV.2310.10181)
- [13] T. Aramaki et al., *GAPS contributions to the 38th international cosmic ray conference (nagoya 2023)*, Oct. 2023. DOI: [10.48550/arXiv.2310.10181](https://doi.org/10.48550/arXiv.2310.10181) arXiv: 2310.10181 [astro-ph].
- [14] E. Riceputi, M. Boezio, L. Fabris, L. Ghislotti, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, and G. Zampa, “The 32 Analog Channels Readout for the Long-Flight GAPS Balloon Experiment Tracking System,” in *Proceedings of SIE 2022*, G. Cocorullo, F. Crupi, and E. Limiti, Eds., Cham: Springer Nature Switzerland, 2023, pp. 27–32, ISBN: 978-3-031-26066-7. DOI: [10.1007/978-3-031-26066-7_5](https://doi.org/10.1007/978-3-031-26066-7_5)
- [15] E. Riceputi et al., “Experimental results from the characterization of a 32-channels mixed-signal processor for the GAPS experiment,” in *2023 IEEE Nuclear Science Symposium, Medical Imaging Conference and International Symposium on Room-Temperature Semiconductor Detectors (NSS MIC RTSD)*, Vancouver, BC, Canada: IEEE, Nov. 2023, pp. 1–1, ISBN: 979-8-3503-3866-9. DOI: [10.1109/NSSMICRTSD49126.2023.10338321](https://doi.org/10.1109/NSSMICRTSD49126.2023.10338321)

Conference Presentations

Oral presentations delivered at international conferences and scientific meetings in the fields of micro-electronics, particle physics instrumentation, and detector readout systems.

- 2025** *DTMOS Feedback Network for Dynamic Signal Compression in Low-Noise Charge Amplifier*. M. Manghisoni, L. Ghislotti, P. Lazzaroni, L. Ratti, V. Re, E. Riceputi. IEEE NSS, MIC and RTSD, 2025. [Session]
- 2025** *A 65 nm CMOS Readout ASIC with DTMOS CSA Feedback for Dynamic Signal Compression in Balloon-Borne Spectrometry Applications*. L. Ghislotti, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, E. Riceputi. LVI Annual Meeting of the Italian Society of Electronics (SIE) — Sensors, Microsystems and Instrumentation session, University of Naples “Parthenope”, Naples, Italy, Jun 26. [Programme]
- 2024** *Low-Noise Wide Dynamic Range Charge Sensitive Amplifier in 65 nm CMOS Technology for the Second Flight of the GAPS Experiment*. L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi. PRIME 2024 — Photon and Particle Detection Circuits session, Larnaca, Cyprus, Jun 10. [Conference site]

- 2023** *Experimental results from the characterization of a 32 channels mixed signal processor for the GAPS experiment.* E. Riceputi, M. Boezio, L. Fabris, E. Cavazzuti, L. Ghislotti, P. Lazzaroni, M. Manghisoni, V. Re, L. Ratti, V. Vagelli, M. Xiao, G. Zampa. IEEE NSS, MIC and RTSD, Vancouver, Canada, Nov 9. [Session]
- 2022** *A 32-channels mixed-signal processor for the tracking system of the GAPS experiment.* V. Re, L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi, L. Ratti, M. Boezio, G. Zampa, L. Fabris. 15th Pisa Meeting on Advanced Detectors, La Biodola, Isola d'Elba, May 27. [PDF]

Conference Posters

Poster contributions presented at international conferences and scientific workshops in the fields of microelectronics, detector instrumentation, and astroparticle physics.

- 2025** *The ANTARES4 Readout ASIC for the Second Flight of the GAPS Experiment.* L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi. Advances in Space AstroParticle Physics (AS-APP2025), Sant Feliu de Guíxols, Girona (ES), May 12–16. [Indico]
- 2024** *Design and performance of the readout chip in the Si(Li) tracker module of the GAPS experiment.* V. Re, L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi, L. Ratti, M. Boezio, G. Zampa, L. Fabris. 16th Pisa Meeting on Advanced Detectors, La Biodola, Isola d'Elba, May 26–Jun 1. [Poster]
- 2023** *32-channels mixed-signal processor for the tracking system of the GAPS dark matter experiment.* E. Riceputi, M. Boezio, L. Fabris, L. Ghislotti, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, G. Zampa. TWEPP 2023 — Topical Workshop on Electronics for Particle Physics, Geremeas, Italy, Oct 1–6.
- L'esperimento GAPS per l'indagine della materia oscura.* L. Ghislotti on behalf of the GAPS Collaboration. IFAE 2023 — Incontri di Fisica delle Alte Energie, Catania, Apr 12–14. [Agenda]
- 2022** *The 32 analog channels readout for the long flight GAPS balloon experiment tracking system.* E. Riceputi, M. Boezio, L. Fabris, L. Ghislotti, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, G. Zampa. 53rd Annual Meeting of the Italian Electronics Society (SIE), Pizzo, Italy, Sep 7–9.

Paper Reviewing Activity

Luca Ghislotti serves as a technical reviewer in the fields of microelectronics and electronics design for the following international journals and conferences:

International Journals

- *IEEE Transactions on Nuclear Science (TNS)*, since 2025.
 - Verified peer-review activity recorded on the Web of Science Reviewer Recognition Service (formerly Publons).
 - Reviewer Profile IDs: CtrzGmDC; V1zhxryA.

International Conferences

- *International Conference on Modern Circuits and Systems Technologies (MOCAST)*, Athens, Greece (2023) and Sofia, Bulgaria (2024).
- *International Conference on Applications in Electronics Pervading Industry, Environment and Society (ApplePies)*, Genova, Italy (2023) and Turin, Italy (2024).

Visiting Periods

- **Dec 2022 & Mar 2023 — Space Sciences Laboratory (SSL), University of California, Berkeley (CA)** Contributed to the assembly and calibration of the GAPS tracker modules. These visits were focused on hands-on integration of the readout electronics with the silicon detector layers, including noise performance validation and threshold tuning.
- **Jun 2023 — National Technical Systems (NTS), Los Angeles (CA)** Participated in the Thermo-Vacuum (TVAC) qualification test of the GAPS tracker. In this context, worked on the thermal system of the instrument and collaborated directly with engineers from the Japan Aerospace Exploration Agency (JAXA) to validate the thermal performance under simulated flight conditions.
- **Aug 2023 — Pupin Physics Department, Columbia University, New York (NY)** Attended the GAPS Collaboration Meeting, contributing to technical discussions on tracker performance, calibration strategy, and the preparation for integration activities.
- **Jan & May 2024 — Nevis Laboratories, Columbia University, Irvington (NY)** Engaged in the assembly and system-level testing of the GAPS payload. Activities included functional verification of the Si(Li) tracker electronics, DAQ integration, and support to calibration campaigns with cosmic-ray muons.
- **May 2024 — NASA Columbia Scientific Balloon Facility (CSBF), Palestine (TX)** Participated in the full payload integration and testing at the CSBF facility. Conducted a dedicated Thermo-Vacuum (TVAC) validation test of the instrument power supply system and contributed to pre-flight checks in preparation for long-duration balloon operations.
- **Nov 2024 — NASA Long Duration Balloon (LDB) facility, McMurdo Station, Antarctica** Selected and qualified to take part in the Antarctic launch campaign under the NSF United States Antarctic Program (USAP). Responsibilities included integration and testing of the GAPS payload

at the LDB site, coordination of tracker operations, and direct support to launch activities of the long-duration balloon mission.

Ph.D. Schools and Courses

During his Ph.D. studies, Luca Ghislotti attended the following specialized schools and training courses in the field of high-energy physics detectors and microelectronics:

- *Giornate di Studio sui Rivelatori — Scuola F. Bonnaudi e E. Chiavassa*, June 26–30, 2023, Sala del Palazzo Comunale, Cogne (AO), Italy. (gsr.to.infn.it)
- *EURIZON Detector School 2023*, July 17–28, 2023, Bergische Universität Wuppertal, Germany. Delivered the student talk “*The GAPS experiment for the indirect search of dark matter*” during the session *Making engaging scientific presentations*, organized by Lucie Linssen (CERN) and David Barney (CERN). (indico.cern.ch)
- *SIE Ph.D. School 2023*, September 4–7, 2023, Università degli Studi di Messina, Italy. Organized by SIE (Società Italiana di Elettronica).
- *SystemVerilog for Design*, March 18–21, 2024, Microelectronics Support Centre, UKRI STFC Rutherford Appleton Laboratory, Harwell Campus, Didcot (UK). Organized by EUOPRACTICE. (europractice.stfc.ac.uk)
- *SIE Ph.D. School 2025*, June 23–25, 2025, Università degli Studi della Campania Luigi Vanvitelli, Napoli, Italy. Organized by SIE (Società Italiana di Elettronica).
- *Scuola di Misura*, February 17, 2026, Polo Tecnologico di Pavia, Italy. Training event organized by Batter Fly, Rohde & Schwarz, and Wuerth Elektronik, focused on practical and theoretical aspects of electronic measurements, DC/DC converters characterization, control loop response, and conducted/radiated EMI measurements.

Academic Activity

Teaching Activity

Since 2022, Luca Ghislotti has carried out teaching assistant activities for the degree programs in *Engineering and Management for Health, Mechatronics and Smart Technology Engineering*, and *Computer Engineering* at the University of Bergamo. A detailed list by academic year follows:

- 2022–2023**
 - Biomedical Sensors (6 CFU), M.Sc. in Engineering and Management for Health.
 - Sensors (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
 - Industrial IoT (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
- 2023–2024**
 - Biomedical Sensors (6 CFU), M.Sc. in Engineering and Management for Health. Included the seminar “*Tiny Technologies, Big Impact: Lab-on-Chip Devices, Microfluidics, and MEMS in Biomedical Engineering*”.
 - Sensors (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
 - Industrial IoT (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
- 2024–2025**
 - Biomedical Sensors (6 CFU), M.Sc. in Engineering and Management for Health.
 - Sensors (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
 - Smart Sensors and Electronic Systems (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
 - Industrial IoT (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
 - Progettazione dei Sistemi Elettronici (6 CFU), M.Sc. in Computer Engineering. Delivered introductory lessons on PCB design with Altium Designer 25 (schematics, component libraries, PCB layout, DRC, manufacturing files).
- 2025–2026**
 - Smart Sensors and Electronic Systems (3 CFU), M.Sc. in Mechatronics and Smart Technology Engineering.
 - Elettronica Industriale (6 CFU), B.Sc. in Computer Engineering.
 - Biomedical Sensors (6 CFU), M.Sc. in Engineering and Management for Health.

Thesis Supervising Activity

During his Ph.D. studies, Luca Ghislotti has served as co-supervisor or reviewer for the following theses at the Department of Engineering and Applied Sciences, University of Bergamo:

- “*Characterization and calibration of a rad-hard bandgap voltage reference designed for high-energy physics applications*”, M.Sc. in Computer Engineering, A.Y. 2022/2023.
- “*Development of a MicroPython firmware in mbed-flash mode for a wearable platform*”, B.Sc. in Computer Engineering, A.Y. 2022/2023.

- “*Progetto e caratterizzazione di canali di lettura per SiPM impiegati nella rivelazione di muoni da radiazioni cosmiche*”, B.Sc. in Computer Engineering, A.Y. 2023/2024.
- “*Progettazione e sviluppo di un sistema embedded low-power per il monitoraggio di fistole artero-venose*”, B.Sc. in Computer Engineering, A.Y. 2024/2025.
- “*Design of an 8-bit digital-to-analog converter in a 65 nm CMOS technology for the second flight of the GAPS experiment*”, M.Sc. in Mechatronics and Smart Technology Engineering, A.Y. 2025/2026.

Public Engagement and Outreach Activities

- **Seminar:** “**L’indagine della materia oscura con l’esperimento GAPS**” Museo di Scienze Naturali “E. Caffi”, Bergamo (December 14, 2024). Public seminar delivered during the University of Bergamo event “*Voci dall’Antartide*”, part of the initiative “*Chiedilo all’acqua – Dialoghi sul valore di una risorsa vitale e sul suo futuro*”. The meeting gathered researchers involved in Antarctic projects funded by the PNRA and in international collaborations such as the GAPS experiment, supported by NASA, JAXA, INFN, and ASI. Event details available at disa.unibg.it/it/chiedilo-acqua-public-engagement-unibg. The event was also featured in the article “*Dal 13 al 15 dicembre: Chiedilo all’acqua, dialoghi sul valore di una risorsa vitale e sul suo futuro*” on *Montagne e Paesi* ([link](#)).
- **Article Appearance:** **Corriere della Sera** Featured in the article “*L’acqua da indagare – Missione in Antartide*”, published on December 14, 2024 (Bergamo edition). The article highlighted Luca Ghislotti’s role in the GAPS experiment and his participation in the Antarctic balloon launch campaign.
- **Invited Talk at the 30th Anniversary of Centro Studi Leonardo da Vinci** Bergamo (May 9, 2025). Invited talk to students and faculty during the school’s 30th anniversary. Shared academic and professional journey from Leonardo da Vinci studies to international collaborations, emphasizing the importance of technical education, following one’s passions, and his Antarctic mission with the GAPS experiment.
- **Talk:** “**Elettronica ai confini del mondo: tra i ghiacci dell’Antartide alla ricerca della materia oscura**” Università degli Studi di Bergamo Open Day, presentation of the course *Ingegneria delle Tecnologie per l’Elettronica e l’Automazione* (March 22, 2025). Talk focused on electronics for extreme environments, the GAPS experiment, and the Antarctic mission experience.

Projects and Awards

In 2023, Luca Ghislotti participated in the Bosch Sensortec *Making Sensor Tec! Challenge* with the project “*Exhaust gas pattern analysis for environmental monitoring and predictive maintenance*”. He and his team won first prize at the award ceremony held at Bosch Sensortec’s headquarters in Milan (April

14, 2023) and were subsequently invited to present the project at Bosch Sensortec's main headquarters in Reutlingen, Germany (July 4, 2023).

Pursuant to art. 46 and 47 of Presidential Decree 445/2000, I declare that the information included in my CV is true, being aware of the possible application of Article 76 of the same decree in the event of a false declaration.

Pursuant to Legislative Decree (D.Lgs.) no. 196/2003 and Regulation (UE) 2016/679, the undersigned acknowledges that his personal data collected here will be processed, including in electronic form, exclusively for the purpose related to this procedure and authorizes their use accordingly.

Bergamo, 27/02/2026