Scientific and Academic Curriculum

Luca Ghislotti

Department of Engineering and Applied Sciences
University of Bergamo

November 13, 2022

Personal Details

Forename and Surname:	Luca Ghislotti
Place and Date of Birth:	Treviglio (BG), 03/02/1998
Nationality:	Italian
Address:	Via delle Crocette, SNC 24050 Ghisalba (BG)
Mobile:	+39 3331133825
Personal Email Address:	ghislottiluca@gmail.com
Academic Email Address:	luca.ghislotti@unibg.it
Skype:	Luca Ghislotti
GitHub:	github.com/lucaghislo
LinkedIn:	linkedin.com/in/luca-ghislotti
Google Scholar:	scholar.google.com
Personal Web Page:	https://lucaghislotti.com
Academic Web Page:	https://didattica-rubrica.unibg.it

Academic Education and Training

Doctor of Philosophy (Ph.D.) - Microelectronics for High Energy Physics

Università degli Studi di Bergamo, Bergamo (2022 - 2025)

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

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

Thesis:	"Characterisation of the readout electronics of the Si(Li) tracker for the first flight of the GAPS experiment"
Supervisor:	Prof. Massimo Manghisoni

Keywords: GAPS, Dark Matter, Spectrometer, Si(Li), ASIC
Final Grade: 110/110 cum laude

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

Work Experience

Intern at PRSE Srl

Internship project regarding the development of a self-driving AV
Bergamo, Italy
February 2022 - March 2022

Shareholder of Efficient Farm Engineering Srl

Computer Engineer at an innovative startup operating in the agricultural sector
Ghisalba (BG), Italy
December 2019 - Ongoing

Shareholder of Società Agricola Le Campagnole Srl

Manager and IT Consultant of an organic farm with production and sale of dairy products
Cologno al Serio (BG), Italy
January 2018 - October 2019

Scholarships and Certificates

Ph.D. Scholarship

Dottorato di Ricerca in INGEGNERIA E SCIENZE APPLICATE (XXXVIII ciclo)
Università degli Studi di Bergamo, Bergamo
Years: 2022 - 2025

TOP 10 Student Program

Università degli Studi di Bergamo, Bergamo
Years: 2017 - 2018, 2020 - 2021, 2021 - 2022
Fee exemption award issued by Università degli Studi di Bergamo to best students

Io e Lode - Studenti Eccellenti Scuole Bergamasche

Confindustria Bergamo, Bergamo
Years: 2013 - 2014, 2014 - 2015, 2015 - 2016, 2016 - 2017
Award issued by Confindustria Bergamo to best upper secondary school students

FCE (B2 First)

Cambridge Assessment English, Cambridge (2017)

Memberships

INFN Memeber

Istituto Nazionale di Fisica Nucleare, Pavia
Member of INFN CSN2 group as Technological Ph.D., section of Pavia.

IEEE Graduate Student Member

Institute of Electrical and Electronics Engineers
Membership number `97046986`

ORCID Account

ORCID ID `https://orcid.org/0000-0002-7084-5979`

Language skills

Italian: Mother tongue
English: Fluent (C1)
Spanish: Intermediate (B2)

Computer skills

Advanced knowledge: C/C++, Java, Python, LaTeX, MATLAB, JavaScript, SQL, Scala, HTML, PHP, Linux, GIT

Intermediate knowledge: LTSpice, B&R Automation Studio (ST, SFC, Ladder), MongoDB, Apache Spark, REST API, Autodesk AutoCAD, Autodesk Fusion

Basic Knowledge: XPath, XQuery, Android Apps Development, Assembly, Simulink, Autodesk Eagle

Publications and Presentations Co-Authorships

V. RE, L. GHISLOTTI, P. LAZZARONI, M. MANGHISONI, E. RICEPUTI, L. RATTI, M. BOEZIO, G. ZAMPA, 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, https://doi.org/10.1016/J.NIMA.2022.167617.

V. RE, L. GHISLOTTI, P. LAZZARONI, M. MANGHISONI, E. RICEPUTI, L. RATTI, M. BOEZIO, G. ZAMPA, L. FABRIS, *"A 32-channels mixed-signal processor for the tracking system of the GAPS experiment"*, 15th Pisa Meeting on Advanced Detectors, La Biodola, Isola d'Elba, May 27, 2022, https://agenda.infn.it/event/22092/contributions/167321.

E. RICEPUTI, M. BOEZIO, L. FABRIS, L. GHISLOTTI, P. LAZZARONI, M. MANGHISONI, L. RATTI, V. RE, G. ZAMBPA, *"The 32 analog channels readout for the long flight GAPS balloon experiment tracking system"*, SIE 2022 - Pizzo (VV), 7/9 September 2022, https://events.dimes.unical.it/sie2022.

Scientific activity

The scientific activity and research interest of Luca Ghislotti fall mainly in the design of low-noise, low-power analogue front-end integrated circuit for semiconductor detectors readout in high energy physics and their characterisation.

The research activity to date encompasses the following:

1. **Characterisation of the readout electronics of the Si(Li) tracker of the GAPS experiment**
   The research work consists in the validation of the flight items of the Si(Li) tracker of the General AntiParticle Spectrometer (GAPS) experiment scheduled for late 2023 from the McMurdo Station in Antarctica. The characterisation work is aimed at the validation of the readout electronics of the tracker and its calibration, with great concern for ultra-low noise performance and high energy particles detection accuracy.

2. **Design of a 65 nm CMOS readout ASIC for the second flight of the Si(Li) tracker of the GAPS experiment**
   The research work is focused on the design of an improved version of the Application Specific Integrated Circuit (ASIC) currently employed for the readout of the Si(Li) detectors of the GAPS tracker by moving from the current 180 nm CMOS technology in wich the integrated circuit has been designed, to a more scaled 65 nm CMOS technology. This new chip will be used during the second long duration balloon flight experiment that will take off from the McMurdo Station in Antarctica at the end of 2025.

Interests and Activities

Electronics, Linux, Hi-Fi, Audio Power Amplifier Design, Film Photography, Aerospace

Volunteer Experience

Contributor at Informatici Senza Frontiere ONLUS (2018 - Ongoing)

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 article in the event of a false declaration.
Pursuant to the Legislative Decree (D.Lgs.) no. 196/2003 and the Regulation (UE) 2016/679, the undersigned declares to be well informed that his/her personal data being collected here will be treated, also in electronic form, exclusively for the scope of the procedure related to this declaration and authorizes the collection of personal data for the fulfilment of this procedure.

Bergamo, 13/11/2022 Luca Ghislotti