Federico Bellisardi

Ph.D. Candidate

September 6th, 1993

Github: federicobellisardi

Web: federicobellisardi

E-Mail: bellisardi@gmail.com

Linkedin: federico-bellisardi

About me

Ph.D. in Applied Physics from the University of Bologna with a strong focus on complex systems, data-driven models, and advanced data analytics. I specialize in leveraging these tools to tackle urban mobility challenges and develop innovative smart city solutions. Passionate about transforming data into actionable insights for sustainable development.

Programming Languages

LaTeX

Python

c++

ABAP

Interest Areas

Complex Systems, Data-Driven Models, Data Analytics, Machine Learning Applications

Experience

2025	Post Doc Researcher	IFISC, UIB
2021 - 2022	Research Fellow	University of Bologna
2019 - 2020	SAP - ABAP Developer	E-Services, De Longhi Company

Education

2022 - 2024	Ph.D. Applied Physics	University of Bologna
	Dissertation Title : Data Analytics and Predictive Models for sustainable mobility in future smart cities	
2015-2019	M.Sc. Theoretical Physics	University of Bologna
	Dissertation Title: Stability Of Gaseous Structures in Axisymmetric Rotation in presence of a Black Hole	
2012-2015	B.Sc. Physics	University of Bologna
	Dissertation Title: Studio del Trapping Adiabatico per Mappe Stocastiche	

Languages

Italian	Native
English	Advanced
Spanish	Advanced
French	Basic

Visiting

2024	IFISC Universidad de las Islas Baleares	February 11th - March 11th November 11th - November 18th
2023	USJ Universidad San Jorge - Zaragoza	October 2nd - October 9th
2023	IFISC Universidad de las Islas Baleares	March 1st - June 29th

Conferences

2024	NetSci-X 2024 - Conference on Network Science Poster Title: An Agent-Based Model for Traffic Flows Reconstruction from Distributed Data.	January 22nd - 25th
2023	I Congreso Español sobre Investigación en Movilidad Titulo Charla: Reconstrucción del Flujo de Tráfico a Partir de Datos Distribuidos. Caso de Estudio Emilia Romagna, Italia.	October 5th - 6th
2023	INFN IS BioPhys 2023 Talk Title: Traffic Flows Reconstruction from Distributed Data: a Case Study.	September 18th - 20th
2022	INFN IS BioPhys 2022 Talk Title: Data Driven Dynamical Model for Traffic Flows on a Road Network.	September 14th - 16th
2022	Convegno S.LI.DES	June 9th - 10th

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Skills

I have extensive experience in programming, data analysis, and model development, with advanced proficiency in Python and C++, alongside expertise in LaTeX for producing high-quality technical documentation. My core skills include designing and implementing data-driven models, optimizing algorithms, and applying machine learning techniques to solve real-world problems. I am particularly skilled at analyzing large and complex datasets, extracting actionable insights, and presenting findings through clear and effective data visualizations.
Throughout my career, I have demonstrated a strong ability to work collaboratively in interdisciplinary teams, managing projects that bridge technical challenges with strategic objectives. My problem-solving mindset and attention to detail enable me to tackle complex challenges in dynamic environments. Additionally, I have a deep interest in leveraging technology to drive innovation, particularly in areas such as smart cities, urban mobility, and sustainable development.
I am passionate about creating impactful solutions that not only advance technological progress but also address pressing societal challenges. With a focus on continuous learning, I strive to stay at the forefront of emerging tools and technologies, ensuring my contributions align with industry trends and organizational goals.

Workshops

2024	CaLISTA Geometry-Informed Machine Learning Paris, France	September 2nd - 5th
2023	GEFENOL Barcelona, Spain	July 17th - 28th
2022	INFN School of Statistics 2022 Pestum, SA, Italy	May 15th - 20th

Teaching

2022 - 2024	Mathematics and Computer Science University of Bologna (Dep. Pharmacy and Biotechnology - FABIT)
2021 - 2022	Physics (A-L) (Module 2) University of Bologna (Dep. Biological, Geological, and Environmental Sciences)

Certifications

2022	E-learning course module 2 - Sicurezza Specifica;
2017	E-learning course module 1 - Sicurezza Generale;

Awards and Achievements

2023	Marco Polo Grant, University of Bologna *Awarded for research mobility abroad*
2023-2024	Contratto su attivita' di supporto alla didattica - FARMACIA - CONTRATTO DI TUTORATO PER SUPPORTO ALLE ATTIVITÀ DI RECUPERO DELLE CONOSCENZE DI MATEMATICA/FISICA [cod. B1013]
2023-2024	Contratto su attivita' di supporto alla didattica - BIOTECNOLOGIE - MATEMATICA APPLICATA E STATISTICA [cod. 89332]
2022-2023	Contratto su attivita' di supporto alla didattica - BIOTECNOLOGIE - MATEMATICA E INFORMATICA [cod. 93303] - [Modulo 2] Laboratorio matematico - informatico
2022-2023	Contratto su attivita' di supporto alla didattica - CHIMICA E TECNOLOGIA FARMACEUTICHE - MATEMATICA, INFORMATICA e FISICA C.I. [cod. 93761] - MATEMATICA E INFORMATICA [cod. 13538]
2021-2022	Contratto su attivita' di supporto alla didattica - SCIENZE BIOLOGICHE - FISICA [cod. 66993] - [Sdoppiamento A-L] - [Modulo 2] Modulo 2: lab. acquisizione dati

Publications

- Esercizi risolti di metodi matematici per le scienze applicate
  Bellisardi F., et al.
  CEA, Zanichelli, 2024

- Congestion transition on random walks on graphs
  Di Meco L., Degli Esposti M., Bellisardi F., Bazzani A.
  Entropy 2024, 26(8), 632; doi, 2024