



Fabrizio Pittorino 07/07/2021

Date of birth: 12/01/1990 | **Nationality:** Italian | **Gender:** Male |

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https://scholar.google.it/citations?user=sT_qeloAAAAJ&hl=it&oi=ao |

Department of Decision Sciences, Bocconi University. Via Guglielmo Röntgen, 1, 20136, Milano, Italy

● WORK EXPERIENCE

01/12/2020 – CURRENT – Milan, Italy

RESEARCH FELLOW – ARTIFICIAL INTELLIGENCE LAB, INSTITUTE FOR DATA SCIENCE AND ANALYTICS, BOCCONI UNIVERSITY

Advisors: Profs. Riccardo Zecchina and Luca Trevisan. *Statistical Physics, Machine Learning, Computational Neuroscience*

01/11/2018 – 31/10/2020 – Turin, Italy

RESEARCH FELLOW – DEPARTMENT OF APPLIED SCIENCE AND TECHNOLOGY, POLITECNICO DI TORINO

Advisors: Profs. Riccardo Zecchina and Arianna Montorsi. *Statistical Physics, Machine Learning, Computational Neuroscience*

PARTICIPATION TO RESEARCH PROJECTS

- ERC Advanced Grant 834861 SO-ReCoDi. "Spectral and Optimization Techniques for Robust Recovery Combinatorial Constructions and Distributed Algorithms" (2019-2024) PI: Prof. Luca Trevisan. (01/12/2020-current)
- INFN, Commissione Scientifica Nazionale 4 (Fisica Teorica), Linea Scientifica 6 (BIOPHYS). National Project. Local Coordinator (Parma): Prof. Raffaella Burioni. National Coordinator: Prof. Mario Nicodemi. (01/01/2014-01/01/2017)
- ERC Starting Grant 207916 FEMTOSCOPY. "Femtosecond Raman Spectroscopy: ultrafast transformations in physics, chemistry and biology" (2008-2013). PI: Prof. Tullio Scopigno. (01/03/2011-04/11/2011)

PARTICIPATION TO RESEARCH GROUPS

- *Artificial Intelligence Lab*, Bocconi University. Scientific Director: Prof. Riccardo Zecchina. (01/09/2017-current)
- *Statistical Physics, Quantum Mechanics and Complex Systems group*, Parma University. PI: Prof. Raffaella Burioni. (01/01/2014-02/03/2017)
- *Cosmology, Gravitation and Multidimensions group*, University of Rome "La Sapienza". PI: Prof. Giovanni Montani. (01/01/2013-31/10/2013)
- *Ultra-fast spectroscopy group*, University of Rome "La Sapienza". PI: Prof. Tullio Scopigno. (01/03/2011-04/11/2011)

● EDUCATION AND TRAINING

01/09/2017 – 25/09/2018 – Milano, Italy

MASTER OF PHILOSOPHY IN STATISTICS – Università Commerciale Luigi Bocconi

Classical and Bayesian Statistics. Course director: Prof. Sonia Petrone

01/01/2014 – 02/03/2017 – Parma, Italy

PHD IN PHYSICS (CON LODE) – Università degli Studi di Parma

Thesis: *Complex emergent dynamics in neural networks with synaptic plasticity*. Supervisor: Prof. Raffaella Burioni
Statistical Physics, Complex Systems, Computational Neuroscience

01/10/2011 – 31/10/2013 – Roma, Italy

MASTER OF SCIENCE IN PHYSICS (110/110 E LODE) – Università degli Studi di Roma "La Sapienza"

"Percorso di Eccellenza", Laurea Magistrale (top 10% in the class). Average grade: 29.6/30

Thesis: *Dark matter candidate from a quantum theory for the gravitational field*. Supervisor: Prof. Giovanni Montani
Theoretical Physics, Quantum Field Theory, Analytical Modelling

01/10/2008 – 04/11/2011 – Roma, Italy

BACHELOR OF SCIENCE IN PHYSICS (110/110 E LODE) – Università degli Studi di Roma "La Sapienza"

"Percorso di Eccellenza", Laurea Triennale (top 10% in the class). Average grade: 29.4/30

Thesis: *Ultrafast transient absorption in photoexcited myoglobin*. Supervisor: Prof. Tullio Scopigno
Experimental Physics, Condensed Matter, Data Analysis

01/09/2006 – 30/07/2008 – Roma

BACCALAURÉAT SCIENTIFIQUE (17,86/20 - MENTION TRÈS BIEN) – Lycée Chateaubriand de Rome

● LANGUAGE SKILLS

Mother tongue(s): ITALIAN | FRENCH

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
SPANISH	B1	B1	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

GNU/Linux | Python | Julia | C/C++ | Mathematica | Matlab

● PUBLICATIONS

Journal articles

- M. Stucchi, F. Pittorino, M. di Volo, A. Vezzani and R. Burioni, Order symmetry breaking and broad distribution of events in spiking neural networks with continuous membrane potential, *Chaos, Solitons & Fractals* 147, 110946 (2021)
- C. Baldassi, F. Pittorino and R. Zecchina, *Shaping the learning landscape in neural networks around wide flat minima*, Proc. Natl. Acad. Sci. U.S.A. 117 (1), 161-170 (2020)
- F. Pittorino, M. Ibáñez-Berganza, M. di Volo, A. Vezzani and R. Burioni, *Chaos and correlated avalanches in neural networks with synaptic plasticity*, Phys. Rev. Lett. 118, 098102 (2017)
- F. Cianfrani, G. Montani and F. Pittorino, *Nonsingular cosmology from evolutionary quantum gravity*, Phys. Rev. D 90, 103503 (2014) - (corresponding author)

Conference papers

- F. Pittorino, C. Lucibello, C. Feinauer, G. Perugini, C. Baldassi, E. Demyanenko, R. Zecchina, *Entropic gradient descent algorithms and wide flat minima*, ICLR 2021

PhD Thesis

F. Pittorino, *Complex emergent dynamics in neural networks with synaptic plasticity*, PhD Thesis in Physics, Parma University (2017)

● CONFERENCES, SEMINARS AND SCHOOLS

Conferences and seminars

- International Conference on Statistical Physics (SigmaPhi), 07/2023, Chania (Crete, Greece), *invited talk*
- I Convegno della Società Italiana di Fisica Statistica - SIFS, 06/2021, Parma (Italy)
- ICLR 2021 (Virtual) - *poster session*
- XXIV Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2019, Parma (Italy)
- Biophysics@Rome, 05/2017, Roma (Italy), *talk*
- XXII Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2017, Parma (Italy), *poster*
- CINPLA - University of Oslo, 05/2017, Oslo (Norway), *invited seminar*
- Statphys26, 07/2016, Lyon (France), *poster*
- Statistical physics methods in biology and computer science, 07/2016, Paris (France), *poster*
- Synchroday workshop, 12/2015, Parma (Italy), *invited seminar*
- XIX, XX, XXI Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2014, 06/2015, 06/2016 (*talk*), Parma (Italy)

Organized conferences

- Member of the scientific secretariat of the conference "Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi", Parma (Italy), for four editions (2014, 2015, 2016, 2017)

Graduate schools

- Fundamental Problems in Statistical Physics XIV, 07/2017, Brunico (Italy), 48 hours of lessons, *Flash talk and poster presentation*
- Spring College on the Physics of Complex Systems, 05/2014, ICTP and SISSA, Trieste (Italy), 100 hours of lessons

● DIDACTIC ACTIVITY

Co-advised students

- Matteo Veludo, B.Sc. student in Economics, Management and Computer Science, graduation in 10/2020 at Università Bocconi (Italy) - with Prof. Christoph Feinauer
- Marco Stucchi, M.Sc. student in Physics, graduation in 09/2017 at Università di Parma (Italy) - with Prof. Raffaella Burioni

Lecturer

"Methods and Data Analytics for Risk Assessment", M.Sc. in Cyber Risk Strategy and Governance, joint degree Bocconi University and Politecnico di Milano:

- Spring 2022 (22h of lesson)
- Spring 2021 (22h of lesson)
- Spring 2020 (14h of lesson)

"Computer Science (Algorithms)", M.Sc. in Data Science and Business Analytics, Bocconi University:

- Spring 2021 (26h of lesson)

Teaching Assistant

"Computer Science (Algorithms)", M.Sc. in Data Science and Business Analytics, Bocconi University:

- Spring 2020 (28h)
- Spring 2019 (29h)

"Computer Programming and Database Systems", M.Sc. in Data Science and Business Analytics, Bocconi University:

- Fall 2020 (30h)
- Fall 2019 (28h)
- Fall 2018 (40h)

"Machine Learning", B.Sc. in Economics, Management and Computer Science, Bocconi University:

- Spring 2018 (20h)

Orientation and scientific dissemination

- "Researcher's night", September 27-28, 2019 (Bocconi University)
- "Researcher's night", September 30, 2016 (Parma University)
- "Orientation stage in Physics for schools", February 22-26, 2016 (Parma University)
- "Open day University", April 16-17, 2015 (Parma University)

● HONOURS AND AWARDS

Study awards

- "Percorso di Eccellenza", Laurea Magistrale in Fisica, Università degli Studi di Roma "La Sapienza", Italy, 10/2013 (top 10% students in the class)
- "Percorso di Eccellenza", Laurea Triennale in Fisica, Università degli Studi di Roma "La Sapienza", Italy, 11/2011 (top 10% students in the class)
- "Concours Général", Mention, Ministère de l'Éducation Nationale, Paris (France), 2008

Fundings

● OTHER

Volunteering

- Volunteering activity at "Libera - Associazioni, nomi e numeri contro le mafie"