Gianmarco
De Francisci Morales

Curriculum Vitae (February 9, 2025)

Present

Principal Researcher at CENTAI since May '22. Research on opinion formation, social data mining, and applied machine learning. **Team Lead** for the Social Algorithmics Team (SALT).

Experience

Jul '18–Apr '22	**Senior Research Scientist**, *ISI Foundation*, Turin, Italy. Learning and Algorithms for Data Analytics (LADA) group. Research on opinion dynamics and polarization.
Jan '16–Jul'18	**Research Scientist**, *Qatar Computing Research Institute*, Doha, Qatar. Distributed systems group. Research on data-intensive scalable computing.
Mar '15–Dec '15	**Visiting Scientist**, *Aalto University*, Helsinki, Finland. Data mining group. Research on graph, news, and social media mining.
Dec '14–Jan '21	**Apache SAMOA PMC Member**, *Apache Software Foundation*. Member of the Project Management Committee for the Apache SAMOA project, a platform for mining big data streams.
Sep '13–Mar '15	**Research Scientist**, *Yahoo Labs*, Barcelona, Spain. Web mining group. Research on Web mining and data-intensive scalable computing.
Oct '12–Dec '12	**Visiting Scientist**, *Yahoo IntoNow*, Sunnyvale, USA. Design and development of a backend for stream processing based on Apache Storm.
Apr '12–Aug '12	**Google Summer of Code Mentor**, *Google & Apache Software Foundation*. Mentor for Apache Pig in the GSoC initiative. Implementation of a distributed RANK function in MapReduce. Integrated in Pig 0.11. [code]
Aug '11–Mar '21	**Apache Pig Committer**, *Apache Software Foundation*. Committer for the Apache Pig project from the Hadoop ecosystem. Member of the open source community that develops Pig, a framework for large-scale data analysis.
Oct '11–Sep '13	**Postdoctoral Researcher**, *Yahoo Labs*, Barcelona, Spain. Web mining group. Research on Web and social network mining.
May '11–Aug '11	**Google Summer of Code Student**, *Google & Apache Software Foundation*. Student in the GSoC project for Apache Pig. Sugar for Pig: syntactic sugar features to simplify the use of Pig (Java, ANTLR). Integrated in Pig 0.10. [code 1|code 2]
Oct '10–Sep '11	**Research Intern**, *Yahoo Research*, Barcelona, Spain. Research on data-intensive scalable computing.

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May '10–Aug '10	**Google Summer of Code Student**, *Google & Apache Software Foundation*. Student in the GSoC project for Apache Pig. Design and implementation of a binary comparator for secondary sort. The new comparator is 10x faster, and produces a 20% end-to-end improvement for relevant queries (Java). Integrated in Pig 0.9. [code]
Nov '09–Jun '12	**Research Associate**, *National Research Council (ISTI-CNR)*, Pisa, Italy. HPC Lab. Research on cloud computing for large scale data analysis.

Education

Mar '09–Mar '12	**Ph.D. ("Doctor Europaeus") in Computer Science and Engineering**, *IMT Institute for Advanced Studies Lucca*, Italy, full marks and honors (*excellent*). Thesis: "Big Data and the Web: Algorithms for Data Intensive Scalable Computing".
Mar '06–Aug '06	**Erasmus student**, *Pazmany Peter Catholic University*, Budapest, Hungary. Artificial Intelligence. Design Patterns in Java. Cellular Neural Networks.
Oct '04–Apr '08	**Master's in Computer Engineering**, *University of Catania*, Italy, full marks and honors (*110/110 cum laude*). Thesis: "Multi-Objective Design Space Exploration of Embedded Systems in a Grid Environment" (developed in C++, written in English).
Oct '01–Oct '04	**Bachelor's in Computer Engineering**, *University of Catania*, Italy, full marks and honors (*110/110 cum laude*). Thesis: "Serivzi di allocazione e monitoraggio dei job e delle risorse di una grid" (Allocation and Monitoring Services for Jobs and Resources in a Grid environment).

Awards

2023	ELLIS Member
2022	Best paper award, SocInfo '22
2021	ACM Senior Member
2021	Best paper award @CHI '21
2020	Best paper runner-up, SocInfo '20
2020	Best paper honorable mention, WebSci '20
2018	Best reviewer award, WWW '18
2017	Best student paper award, WebSci '17
2017	Best student paper award, WSDM '17
2010	Erasmus student mobility scholarship
2009	First in admission ranking for Ph.D. out of 446 applicants
2009	Ph.D. scholarship for 3 years sponsored by the European Union
2008	Award for outstanding academic career from University of Catania
2006	Erasmus scholarship from ERSU (Regional Agency for University Studies)
2006	Socrates mobility scholarship from University of Catania
2005	Master's scholarship from ERSU (Regional Agency for University Studies)
2004	Award for achieving full marks and honors in minimum time from ERSU

Languages

Italian	**Native**	
English	**Proficient**	*European level C2*
Spanish	**Proficient**	*European level C2*
Japanese	**Basic**	*European level A2*

Computer skills

Languages Python, Java, C/C++, Bash, SQL, LaTeX.

Patents

- Method for estimating the default risk of companies, taking into account network contagion through the trade credit channel (Italy Patent 102021000003788).
- System and method of matching content items and consumers (US Patent 20130151456).
- Method and apparatus to build flowcharts for e-shopping recommendations (US Patent 20140358720).
- Method and system for displaying content relating to a subject matter of a displayed media program (US Patent 9817911B2).
- Method and system for recommending relevant Web content to second screen application users (US Patent App. 13/969920).

Community Service

Worhshop	"NOCAPS '24: 1st Workshop on Networks and Opinions on Climate Action in the Public Sphere", ICWSM '24. [web]
Summer School	"Learning from Big Data Streams: Algorithm and System Design", EAIA '18 Advanced School on Data Science for Big Data
Tutorial	"Polarization on Social Media", ICWSM '17, WWW '18. [web]
Tutorial	"IoT Big Data Stream Mining", KDD '16, CIKM '16, AAAI '17, SDM '17. [web]
Tutorial	"Centrality Measures on Big Graphs: Exact, Approximated, and Distributed Algorithms", WWW '16, 11 Apr 2016. [web]
Tutorial	"Big Data Stream Mining", IEEE BigData '14, 27 Oct 2014. [web|slides]
Worhshop	"SNOW '17: 4th Workshop on Social News on the Web", WWW '17. [web]
Worhshop	"SNOW '16: 3rd Workshop on Social News on the Web", WWW '16. [web]
Worhshop	"SNOW '14: 2nd Workshop on Social News on the Web", WWW '14. [web]
Workshop	"SNOW '13: 1st Workshop on Social News on the Web", WWW '13. [web]

Selected Presentations

slides "Echo Chambers on Social Media", Graph Computing for Humanities and Social Science Research, London, 18 Oct 2024.

slides "Learning Agent-Based Models from Data", Statistical and Probabilistic Methods in Algorithmic Data Analysis, Dagstuhl, 23 Sep 2024.

slides "How I Learned to Stop Worrying and Love the Risk", MIDAS '21 Keynote, Virtual, 17 Sep 2021.

slides "Big Data Streams: The Next Frontier" KTH, Stokholm, 24 Jun 2015.

slides "Mining Big Data Streams: Better Algorithms or Faster Systems?" KAIST, Seoul, 20 Apr 2015.

slides "SAMOA: A Platform for Mining Big Data Streams" RAMSS '13 Keynote, Rio De Janeiro, 14 May 2013.

Selected Publications

[1] Giulia Preti, Adriano Fazzone, Giovanni Petri, and Gianmarco De Francisci Morales. "Higher-Order Null Models as a Lens for Social Systems". *Physical Review X*, 14(3):031032, 2024.

[2] Dominik Bär, Francesco Pierri, Gianmarco De Francisci Morales, and Stefan Feuerriegel. "Systematic discrepancies in the delivery of political ads on Facebook and Instagram". *PNAS Nexus*, 3(7):pgae247, 2024.

[3] Arthur Capozzi, Gianmarco De Francisci Morales, Yelena Mejova, Corrado Monti, and André Panisson. "The Thin Ideology of Populist Advertising on Facebook during the 2019 EU Elections". In *The Web Conference*, WWW, 2023.

[4] Corrado Monti, Luca Maria Aiello, Gianmarco De Francisci Morales, and Francesco Bonchi. "The language of opinion change on social media under the lens of communicative action". *Scientific Reports*, 12(1):17920, 2022.

[5] Matteo Cinelli, Gianmarco De Francisci Morales, Alessandro Galeazzi, Walter Quattrociocchi, and Michele Starnini. "The Echo Chamber Effect on Social Media". *Proceedings of the National Academy of Sciences*, 118(9):e2023301118, 2021.

[6] Giulia Preti, Gianmarco De Francisci Morales, and Matteo Riondato. "MaNI-ACS: Approximate mining of frequent subgraph patterns through sampling". In *International Conference on Knowledge Discovery & Data Mining*, KDD, 2021.

[7] Corrado Monti, Gianmarco De Francisci Morales, and Francesco Bonchi. "Learning Opinion Dynamics from Social Traces". In *International Conference on Knowledge Discovery & Data Mining*, KDD, 2020.

For a complete list of publications, please refer to my Google Scholar.