INFORMAZIONI PERSONALI

Guido Caldarelli

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Genere Uomo | Data di nascita 08/04/1967 | Nazionalità Italiana

ESPERIENZE DI LAVORO

(2020 - now) — Professore di I fascia in Fisica Teorica (FIS02 02/A2)
Ca' Foscari, Venezia, Italia

(2014 - 2020) — Professore di I fascia in Fisica Teorica (FIS03 02/B2)
IMT Alti Studi Lucca, Italia

(2012 - 2014) — Professore di II fascia in Fisica Teorica (FIS03 02/B2)
IMT Alti Studi Lucca, Italia

(2007 - 2012) — Primo Ricercatore
CNR- Institute of Complex Systems, Roma Italia

(2004 - 2007) — Ricercatore
CNR- Institute of Complex Systems, Roma Italia

(1998 - 2007) — Ricercatore
Centro SMC, INFM, Istituto Nazionale Fisica della Materia, Roma Italia

EDUCATION AND TRAINING

24/10/1996 — PhD Physics, Condensed Matter, final rank *laude at* SISSA/ISAS, Trieste (Italy)

14/10/1994 — MPhil Physics, final rank *30/30 cum laude at* SISSA/ISAS, Trieste (Italy)

16/07/1992 — Degree in Physics final rank *110/110 cum laude* at Univ. "Sapienza'", Rome (Italy).

PERSONAL SKILLS

Mother tongue(s)   Italian

Other language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English				
C2	C2	C2	C2	C2
Spanish				
A2	B2	A1	A2	B1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Communication skills   ▪ good communication skills gained through my experience as book writer and professor

Organisational / managerial skills   Leadership of the Networks Unit in IMT Lucca (team of 20 people)
Presidency of Complex Systems Society 2018-2021 (about 1000 members)

Digital skills	SELF-ASSESSMENT				
	Information processing	Communication	Content creation	Safety	Problem solving
	Proficient	Proficient	Proficient	Proficient	Proficient

Levels: Basic user - Independent user - Proficient user
Digital competences - Self-assessment grid

- good command of office suite (word processor, spread sheet, presentation software)
- good command of LINUX
- good command of FORTRAN, Python, Mathematica

ADDITIONAL INFORMATION

Publications	>200 papers, 3 books as author, 3 as editor
Presentations	40-50 Contributions to Conferences world-wide (STATPHYS, NETSCI, ECCS)
Projects	Coordinator of 2 STREP's (COSIN, FOC) and 1 IP (MULTIPLEX), participation to other projects for a total amount of about 3.3 million Euros
Conferences	Chairman of NETSCI07, ECCS14, NETSCI20, NETSCI-X-2024
Seminars	40-50 Contribution to Conferences world-wide (STATPHYS, NETSCI, ECCS)
Honours and awards	2nd Best paper at ECCS'10 Lisbon
	APS Fellowship (2020)
	Fellow of the Network Science Society (2019)
	Service Prize of the Network Science Society (2020)
	Service Prize of the Complex Systems Society (2023)
	Elected Member of the European Academy of Science
Memberships	Founder and Board of Network Science Society,
	President of Complex Systems Society,
	Founder and Board of Italian Society of Statistical Physics,
Citations	20000 on Google Scholar, h-index 66
Courses	General Physics, Mathematical Methods for Physics, Physics of Complex Systems,,Introduction to Network theory, Stochastic Processes, Networks, Physics for Environmental Sciences

SCIENTIFIC ACTIViTY

My activity is in the field of Complex Networks Research, with particular interest on application to Humanities. My most recent project is based on the mapping of Venetian society across the years based on the documents of the State Archive of Venice. Thanks to these methodologies we have been able to discover the societal development of the Serenessima Republic of Venice, mapping in a quantitative way the importance of places, families, commerce in crucial times for the life of the Republic.

Similarly Graph Theory has been applied to the study of the interrelation between manuscripts as for example the Chinese book collection preserved in the Fondazione Cini. In summary Complex Networks allow to measure relations between otherwise intangible pieces of Cultural Heritage, thereby providing to experts a new powerful instrument for their analysis.
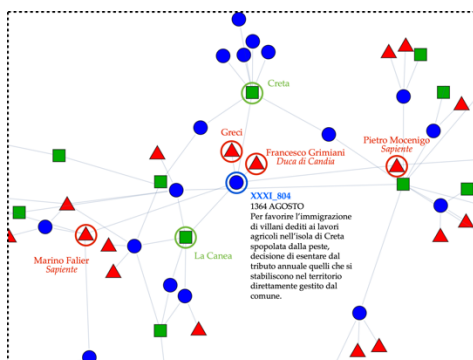
SELECTED PUBLICATIONS

1. Physics of Financial Networks, M. Bardoscia, P. Barucca, S. Battiston, F. Caccioli, G. Cimini, D. Garlaschelli, F. Saracco, T. Squartini, G. Caldarelli *Nature Reviews Physics* **3,** 490-507 (2021).
2. Scale-free networks revealed from finite-size scaling M. Serafino, G. Cimini, A. Maritan, S. Suweis, J. R. Banavar, A. Rinaldo, G. Caldarelli *PNAS* **118**, e2013825118 (2021).
3. The Statistical Physics of Real-World Networks G. Cimini, T. Squartini, F. Saracco, D. Garlaschelli, A. Gabrielli, G. Caldarelli *Nature Reviews Physics* **1** 58-71 (2019).
4. Physics of Humans, Physics for Society G. Caldarelli, S. Wolf, Y. Moreno *Nature Physics* **14** 870 (2018).
5. River Landscapes and Optimal Channel Networks P. Balister, J. Balogh, E. Bertuzzo, B. Bollobás, G. Caldarelli, A. Maritan, R. Mastrandrea, R. Morris, and A. Rinaldo *PNAS* **115** 6548-6553 (2018).
6. Pathways towards instability in Financial Networks M. Bardoscia, S. Battiston, F. Caccioli, G. Caldarelli, *Nature Communications* **8** 14416 (2017).
7. The Price of Complexity in Financial Networks, S. Battiston, G. Caldarelli, R. May, T. Roukny, J.E. Stiglitz *PNAS* **113** 10031-10035 (2016).
8. The spreading of misinformation online, M. Del Vicario, A. Bessi, F. Zollo, F. Petroni, A. Scala, G. Caldarelli, H.E. Stanley, W. Quattrociocchi *PNAS* **113** 554-559 (2016)
9. Quantifying randomness in complex networks C. Orsini, M. Mitrović Dankulov, A. Jamakovic, P. Mahadevan, P. Colomer-de-Simón, A. Vahdat, K. E. Bassler, Z. Toroczkai, M. Boguñá, G. Caldarelli, S. Fortunato, D. Krioukov *Nature Communications* **6**,8627 (2015)
10. Reconstructing a Credit Network G. Caldarelli, A. Chessa, A. Gabrielli, F. Pammolli, M. Puliga *Nature Physics* **9** 125 (2013).
11. Complex Derivatives S. Battiston, G. Caldarelli, C-P Georg, R. May, J. Stiglitz *Nature Physics* **9,** 123 (2013).
12. Self--organized network evolution coupled to extremal dynamics, D. Garlaschelli, A. Capocci, G. Caldarelli, *Nature Physics* **3**, 813-817 (2007).
13. Invasion Percolation and Critical Transient in the Barabási Model of Human Dynamics, A. Gabrielli, G. Caldarelli, *Physical Review Letters* **98**, 208701 (2007).
14. Food Web Topology, D. Garlaschelli, G. Caldarelli, L. Pietronero, *Nature* **435,** E4 (2005).
15. Universal Scaling Relations in Food Webs D. Garlaschelli, G. Caldarelli, L. Pietronero, *Nature* **423,** 165 (2003).
16. Scale-free networks from varying vertex intrinsic fitness, G. Caldarelli, A. Capocci, P. De Los Rios, M.A. Muñoz, *Physical Review Letters* **89**, 258702 (2002).
17. Perturbative approach to the Bak and Sneppen Model, M. Felici, G. Caldarelli, A. Gabrielli, L. Pietronero, *Physical Review Letters* **86**, 1896 (2001).
18. Angular structure of Lacunarity and Renormalization Group, R.C. Ball, G. Caldarelli, A. Flammini, *Physical Review Letters* **85**, 5134 (2000).
19. Self Organization and Annealed Disorder in Fracturing Processes, G. Caldarelli, F. Di Tolla, A. Petri, *Physical Review Letters* **77**, 2503-2508 (1996).

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Signature