Anna Gallo

Curriculum Vitae

IMT School for Advanced Studies
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Education

01/11/2021 - present	**PhD in Systems Science**, IMT School for Advanced Studies Lucca, under the supervision of Prof. Tiziano Squartini and Prof. Diego Garlaschelli, Research Unit NETWORKS.
14/07/2021	**Master's Degree in Mathematics**, University of Florence, Florence, Italy, 110/110 cum Laude.
17/07/2019	**Bachelor's Degree in Mathematics**, University of Florence, Florence, Italy, 110/110 cum Laude.
04/07/2016	**Scientific High School Diploma**, Liceo Scientifico A.M.E. Agnoletti, Sesto F.No, Italy, 100/100 cum Laude.

Invited Talks

02/09/2024 — **Frameworks, Research and applIcations in complEx Networks with signeD edgeS**, satellite of the Conference on Complex Systems 2024, Exeter (United Kingdom)

Testing structural balance theories in undirected and directed signed networks

https://signet-friends.github.io/

15/05-17/05/2024 — **Signed Relations and Structural Balance in Complex Systems: From Data to Models**, ETH Workshop, Zurich (Switzerland)

Assessing frustration in real-world signed networks: towards a statistical theory of balance

https://www.sg.ethz.ch/events/workshop-structural-balance-may-2024/

29/11/2023 — **Series of Seminars *Insalate di Matematica***, University of Milano-Bicocca (Italy)

Strong, weak or no balance? Testing structural hypothesis in real heterogeneous networks

https://sites.google.com/view/insalate-di-matematica/speakers/20232024

02/03/2023 — **Network for Statistical and Causal Inference (NESCI)**, Lucca (Italy)

Causal or Casual? A Network Approach to the Analysis of Inference

https://www.santannapisa.it/it/news/nesci-kick-meeting-march-2-2023-lucca

18/07/2022 — **Workshop *Francesca Romana Nardi: a life in probability, building communities across Europe***, Florence (Italy)

Tunneling behavior of the q-state Potts model with zero external magnetic field

https://www.eurandom.tue.nl/event/celebrating-francesca/

14/03/2022 — **Probability & Statistics Seminar**, TU Delft (The Netherlands)

Critical configurations and tube of typical trajectories for the Potts model with zero external magnetic field evolving under Glauber dynamics

https://www.tudelft.nl/en/eemcs/the-faculty/departments/applied-mathematics/applied-probability/events/past-events/seminar-archives

Contributed Talks

02/09-06/09/2024 — **Conference on Complex Systems 2024 (CCS'24)**, Exeter (England)

Assessing frustration in real-world signed networks: towards a statistical theory of balance

https://ccs24.cssociety.org/programme-2/

16/06- 21/06/2024	**International School and Conference on Network Science 2024 (NetSci)**, Québec City (Canada)
	Assessing frustration in real-world signed networks: towards a statistical theory of balance
	https://netsci2024.com/en/program
10/07/2023	**International Conference on Statistical Physics - SigmaPhi 2023**, Chania-Crete (Greece)
	Strong, weak or no balance? Testing structural hypotheses against real networks
	http://www.sigmaphi.polito.it/
15/09/2021	**Young Applied Mathematicians in Leuca**, Santa Maria di Leuca (Italy)
	Metastability for the Potts and Ising Models with zero and non-zero external magnetic field evolving under Glauber dynamics
	https://www.uzerbinati.eu/Conference/2021/index.html

Poster Sessions

06/10/2021	**Junior female researchers in probability**
	Metastability for the Potts and Ising Models with zero and non-zero external magnetic field evolving under Glauber dynamics
	https://www.wias-berlin.de/workshops/JFRP20/

Attendance at international summer schools

28/08 - 07/09/2023	**School of the Italian Society of Statistical Physics - II Edition**, IMT School for Advanced Studies Lucca. Main coursed taught by Diego Garlaschelli (*Networks*) and Francesco Ginelli (*Active Matter*); seminar courses taught by Paolo Politi (*Non Equilibrium Phase Transitions*), Andrea Gambassi (*Quantum statistical systems out of equilibrium*), Enrico Maria Malatesta (*Statistical mechanics of artificial neural networks*) and Rosario Mantegna (*Econophysics*).
29/08- 08/09/2022	**First School of the Italian Society of Statistical Physics**, IMT School for Advanced Studies Lucca. Main coursed taught by Roberto Benzi (*Hydrodynamics and Turbulence*) and Alessandro Sarracino (*Stochastic Thermodynamics*); seminar courses taught by Franco Bagnoli (*Computational Lab)*), Diego Garlaschelli (*Statistical Physics of Networks*), Andrea Puglisi (*Granular materials*) and Luca Salasnich (*Quantum Statistical Physics with cold atoms*).
07/07- 15/07/2022	**Summer Graduate School on Random Graphs** at the Mathematical Science Research Institute (MSRI), Berkeley (California). Main course taught by Remco van der Hofstad.
02/09- 06/09/2019	**Probability - Summer School**, Fundacao Calouste Gulbenkian, Lisboa (Portugal). Course "Shuffling cards and adding numbers: a peek at Markov chains", Persi Diaconis (Stanford University). Course "Mixing times of Markov chains: famous problems and the techniques behind their solutions", Evita Nestoridi (Princeton University). Course "Random walks, electrical networks and uniform spanning trees", Perla Sousi (University of Cambridge).

Scientific Publications

2024	○ A. G., D. Garlaschelli, R. Lambiotte, F. Saracco, T. Squartini, **Testing structural balance theories in heterogeneous signed networks**, *Communications Physics*, **7**, 154 (2024). https://doi.org/10.1038/s42005-024-01640-7
	○ G. Bet, A. Gallo, F.R. Nardi, **Metastability for the degenerate Potts Model with positive external magnetic field under Glauber dynamics**, *Stochastic Processes and Their Applications*, **172**, 104343 (2024). https://doi.org/10.1016/j.spa.2024.104343

2023	○ S. Baldassarri, A. G., V. Jacquier, A. Zocca, **Ising model on clustered networks: A model for opinion dynamics**, *Physics A: Statistical Mechanics and its Applications*, **623**(1):128811 (2023). https://doi.org/10.1016/j.physa.2023.128811
	○ G. Bet, A. G., S. Kim, **Metastability of the three-state Potts model with general interactions**, *Electronic Journal of Probability*, **28**, 1-37 (2023). https://doi.org/10.1214/23-EJP1003
2022	○ G. Bet, A. G., F.R. Nardi, **Metastability for the degenerate Potts Model with negative external magnetic field under Glauber dynamics**, *Journal of Mathematical Physics*, **63**, 123303 (2022). https://doi.org/10.1063/5.0099480
2021	○ G. Bet, A. G., F.R. Nardi, **Critical Configurations and Tube of Typical Trajectories for the Potts and Ising Models with Zero External Field**, *Journal of Statistical Physics*, **184**, 30 (2021). https://doi.org/10.1007/s10955-021-02814-1
Submitted papers	○ A. G., F. Saracco, R. Lambiotte, D. Garlaschelli, T. Squartini, **Patterns of link reciprocity in directed, signed networks**, *arXiv: 2407.08697* (2024). https://arxiv.org/abs/2407.08697
	○ A. G., D. Garlaschelli, T. Squartini, **Assessing frustration in real-world signed networks: traditional or relaxed balance?**, *arXiv: 2404.15914* (2024). https://arxiv.org/abs/2404.15914

Disseminational Activities

29/09/2023	Tutor at the Bright Night of European Researchers, IMT School for Advanced Studies, Lucca. https://www.bright-night.it/2023/stand-della-ricerca/
2020-2022	Tutor for OpenLab at the University of Florence. https://www.openlab.unifi.it/
20/03/2021	Tutor at *Gara Matematica*, University of Florence.
1-4/02/2021	Tutor at *Settimana Matematica Fiorentina*, University of Florence.
2-5/02/2020	Tutor at *Settimana Matematica Fiorentina*, University of Florence.

Reviewing Activity

2023-present	**Referee**. *Network Science, MathSciNet (AMS)* https://www.webofscience.com/wos/author/record/HTQ-3439-2023

Fellowships and membership in societies

2022 - present	Adherent to GNAMPA - INdAM (Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni.) https://www.altamatematica.it/gnampa/

Mentions, awards and honors

2023 ○ **Strong, weak or no balance? Testing structural hypotheses against real networks** - Mentioned by *Data For Science* in the section 'Fresh From Press' as one of the most interesting academic papers published recently.

2022 ○ *Premio di Laurea 'Alberto Bardazzi'* - best student in the scientific disciplines at the University of Florence in the academic year 2020/2021 (Italy).
https://www.unifi.it/art-6242-proclamati-i-vincitori-del-premio-di-studio-alberto-bardazzi.html
https://www.tvprato.it/video/18esima-edizione-del-premio-di-studio-alberto-bardazzi/
http://www.notiziediprato.it/news/anna-gallo-e-jacopo-gronchi-sono-i-vincitori-della-diciottesima-edizione-del-premio-alberto-bardazzi
https://met.cittametropolitana.fi.it/news.aspx?n=361419
   ○ *Premio Manacorda* for the academic career and for the best original thesis in mathematical modeling, mechanics or mathematical physics for the academic year 2020/2021, Florence (Italy).
   ○ Master's degree prize in Mathematics and Informatics at the University of Florence (Italy), academic year 2020/2021, first place.

2021 ○ Financial refund for productivity and merit during the academic year 2010/2021 at the University of Florence (Italy).

2020 ○ Bachelor's degree prize in Mathematics and Informatics at the University of Florence (Italy), academic year 2018/2019, second place.
https://www.dimai.unifi.it/art-357-consegna-premi-laurea-e-manacorda.html
   ○ Financial refund for productivity and merit during the academic year 2019/2020 at the University of Florence (Italy).

2019 ○ Financial refund for productivity and merit during the academic year 2018/2019 at the University of Florence (Italy).

2018 ○ Financial refund for productivity and merit during the academic year 2017/2018 at the University of Florence (Italy).

2016 ○ *Premio Eccellenza dei diplomati con 100 e Lode*, 2015/2016, INDIRE, at Liceo Scientifico A.M.E. Agnoletti, Sesto Fiorentino (Italy).