Alessio Troiani - CV

Personal Information

Name:	Alessio
Surname:	Troiani
Nationality:	Italian

Current position

October 2022 – in progress	Department of Mathematics and Computer Science, University of Perugia – Assistant Professor (Ricercatore a Tempo Determinato - tipologia B)

Previous Academic Positions

December 2021 – October 2022	Department of Mathematics, Sapienza University of Rome – Assistant Professor (Ricercatore a Tempo Determinato - tipologia A)
October 2020 – August 2021	University of Padua – Post doctoral researcher. Research themes: Statistical Mechanics of Gravitational Systems (supervisor: Prof. Gabriella Pinzari).
May 2018 – May 2020	University of Padua – Post doctoral researcher. Research themes: Statistical Study of Gravitational Systems (supervisor: Prof. Gabriella Pinzari).
May 2017 – April 2018	University of Florence – Post doctoral researcher. Research themes: Parallel stochastics dynamics and applications to statistical mechanics (supervisor: Prof. Francesca R. Nardi).
November 2015 – November 2016	University of Rome "Tor Vergata" – Post doctoral researcher. Research themes: Parallel stochastic dynamics and GPU computing (supervisor Prof. Benedetto Scoppola).

Education

October 2012	PhD in Mathematics (Probability Theory) – Leiden University. Title of the dissertation: "Metastability for low-temperature Kawasaki dynamics with two types of particles". Advisors: Prof. Dr. F. den Hollander (Leiden University) and Dr. F. R. Nardi (TU Eindhoven).

October 2007	Master's degree *cum laude* in Industrial Engineering – University of Rome "Tor Vergata". Title of the dissertation: "An algorithm inspired by cavity fields method for the Unconstrained Binary Quadratic Programming". Advisor: Prof. B. Scoppola.
July 2007 – October 2007	Visiting Student at the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) – Rutgers, The State University of New Jersey during the Special Focus Year on Discrete Random Systems under the supervision of Prof. Dr. J. L. Lebowitz.
October 2004	Bachelor's degree *cum laude* in Industrial Engineering – University of Rome "Tor Vergata". Title of the dissertation: "The urban traffic congestion management in a network with traffic lights: a numerical approach". Advisor: Prof. B. Scoppola.

Publications and preprints

1. F. den Hollander, F. R. Nardi, A.Troiani; Metastability for Kawasaki dynamics with two types of particles: stable/metastable configurations and communication heights, *Journal of Statistical Physics*, 145, 1423–1457, 2011, https://doi.org/10.1007/s10955-011-0370-0

2. F. den Hollander, F. R. Nardi, A.Troiani; Metastability for Kawasaki dynamics at low temperature with two types of particles, *Electronic Journal of Probability*, 17(2), 1–26, 2012, doi:10.1214/EJP.v17-1693

3. F. den Hollander, F. R. Nardi, A.Troiani; Metastability for Kawasaki dynamics with two types of particles: critical droplets, *Journal of Statistical Physics*, 149, 1013–1057, 2012, https://doi.org/10.1007/s10955-012-0637-0

4. A. Troiani; Metastability for Kawasaki dynamics with two types of particles, PhD Thesis, 2012, ISBN 9789461914644, handle: http://hdl.handle.net/1887/20065

5. O. Costin, J. L. Lebowitz, E. R. Speer, A. Troiani; The blockage problem, *Bulletin of the Institute of Mathematics Academia Sinica (New Series)*, 8(1), 49–72, 2013, ISSN: 2304-7895 [online]

6. B. Scoppola, A. Troiani; Gaussian Mean Fields Lattice gas, *Journal of Statistical Physics*, 170, 1161-1176, 2018, https://doi.org/10.1007/s10955-018-1984-2

7. V. Apollonio, R. D'Autilia, B. Scoppola, E. Scoppola, A. Troiani; Criticality of measures on 2-d Ising configurations: from square to hexagonal graphs, *Journal of Statistical Physics*, 177, 1009-1021, 2019, https://doi.org/10.1007/s10955-012-0637-0

8. R. D'Autilia, L. Andrianaivo Nantenaina, A. Troiani; Parallel simulation of two–dimensional Ising models using Probabilistic Cellular Automata, *Journal of Statistical Physics*, 184, 9, 2021, https://doi.org/10.1007/s10955-021-02792-4

9. G. Pinzari, B. Scoppola, A. Troiani; Lonely Planets and Lightweight Asteroids: A Statistical Mechanics Model for the Planetary Problem. *Annales Henri Poincaré*, 2021, https://doi.org/10.1007/s00023-021-01099-0

10. V. Apollonio, V. Jacquier, F. R. Nardi, A. Troiani; Metastability for the Ising model on the hexagonal lattice, *Electronic Journal of Probability*, 27, 2022, https://doi.org/10.1214/22-EJP763

11. B. Scoppola, A. Troiani, M. Veglianti; Tides and dumbbell dynamics; *Regular and Chaotic Dynamics*, 27, 369–380, 2022, https://doi.org/10.1134/S1560354722030078

12. B. Scoppola, A. Troiani, M. Veglianti; Shaken dynamics on the 3-d cubic lattice, accepted for publication on 21 May 2022, *Electronic Journal of Probability*, https://doi.org/10.1214/22-EJP803

13. V. Apollonio, R. D'Autilia, B. Scoppola, E. Scoppola, A. Troiani; Shaken Dynamics: An Easy Way to Parallel Markov Chain Monte Carlo. *J Stat Phys* 189, 39 (2022). https://doi.org/10.1007/s10955-022-03004-3

PREPRINTS:

1. M. Isopi, B. Scoppola, A. Troiani; On some features of Quadratic Unconstrained Binary Optimization with random coefficients, (1024), arXiv:2402.17059

Teaching

2023/2024	"Probability Theory and Mathematical Statistics" – Department of Mathematics and Computer Science – University of Perugia
2023/2024	"Linear algebra and elements of computer science" – Optics and Optometry – University of Perugia
2022/2023	"Probability theory and Mathematical Statistics (probability)" – Department of Mathematics and Computer Science – University of Perugia
2022/2023	"Probability Theory and Statistics" – Department of Computer Science – "Sapienza" University of Rome
2021/2022	"Probability Theory and Statistics" – Department of Computer and Automation Engineering – "Sapienza" University of Rome
2019/2020	"Statistics" - Department of Economics and Finance - LUISS Guido Carli - Italy
2019/2020	Teaching assistant - "Applications of Mathematical Physics" – Department of Mathematics and Physics – University of Rome "Tre" - Italy
2018/2019	"Statistics" - Department of Economics and Finance - LUISS Guido Carli - Italy
2018/2019	"Elementary probability" - Department of Economics and Finance - LUISS Guido Carli - Italy
2018/2019	"Statistics" - Department of Economics and Finance - LUISS Guido Carli - Italy
2017/2018	Adjunct Professor - "Elementary probability" - Department of Economics and Finance - LUISS Guido Carli - Italy
2016/2017	Teaching assistant - "Elementary probability" - Department of Economics and Finance - LUISS Guido Carli - Italy

2015/2016	Teaching assistant - "Probability" course ("Calcolo delle probabilità") at the Math Department of Rome "Tre" – Italy
2010/2011	Teaching assistant - "Stochastic Processes" course at the "Dutch master's degree program in mathematics" – The Netherlands.
September 2009 – January 2012	Teaching assistant - "Introductory Statistics" courses [2009/10 - 2010/11 - 2011/12] at the Faculty of Science of Leiden University – The Netherlands.

Selected Talks

February 2023	Workshop of the Department of Mathematics and Computer Science - Perugia (Italy)
July 2022	Workshop: Francesca Romana Nardi: A life in probability, building communities across Europe - Florence (Italy)
May 2021	Applications of Statistical Methods and Machine Learning in the Space Sciences, Space Science Institute, Boulder, (USA)
October 2020	Series of Seminars on Machine Learning, Optimization and Data Analysis, Unversità di Roma "Tor Vergata" (Italy)
June 2019	Second Italian Meeting on Probability and Mathematical Statistics, Vietri sul Mare (Italy)
March 2019	Mathematical Physics and Related Subjects Seminar, Università di Padova (Italy)
May 2018	Probability Seminar, Leiden University (The Netherlands).
March 2012	Mark Kac Seminar on Stochastics and Physics, Utrecht (The Netherlands).
July 2011	Cornell Probability Summer School, Ithaca (USA).
May 2011	Oberseminar Stochastics, University of Bonn (Germany).
May 2010	Probability Seminar, Leiden University (The Netherlands).

Non academic activty

September 2021 – in progress	Tenured high school teacher - Computer Science (on leave since 23/12/2021)
September 2014 – December 2018	Consulting and training on: • Occupational health and safety • Hygiene of foodstuffs • Quality management
October 2012 – June 2014	Software Engineer in the Statistical Studies team of the Revenue Management Department at Amadeus (Sophia Antipolis – France).

February 2008 – April 2008	Business Analyst at Accenture Italia S.p.a.

Spoken Languages

Italian (native), English (full professional proficiency), French (professional proficiency), Dutch (Elementary proficiency)

Other

January 2015 – present	Member of "Ordine Provinciale degli Ingegneri di Roma"

Perugia, 28 febbraio 2024   ALESSIO TROIANI