

RICCARDO GALLOTTI

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ACADEMIC CAREER

January 2022 – now

Complex Human Behaviour (CHuB) Lab – Fondazione Bruno Kessler Trento: Head of Unit.

- Horizon AI4TRUST Project: AI-based-technologies for trustworthy solutions against disinformation (Project Coordinator; Jan. 2023 – March. 2026)
- H2020 inDICEs Project: study of the digitalization of European cultural production (WP Leader; Jan. 2022 – March. 2023)

October 2018 – December 2021

CoMuNe Lab – Fondazione Bruno Kessler Trento: Researcher.

- Covid-19 Infodemics Observatory (financed by WHO, June 2020 – Dec 2020)
- Computational Human Behaviour (CHuB) Flagship Project. (Oct. 2018 – June 2020)

September 2016 – September 2018

IFISC – Palma de Mallorca: Post-Doc Research Fellow.

- SESAR2020 BigData4ATM Project: study of the interaction between air traffic and urban transit networks.

November 2015 – September 2016

Sabbatical: Collaborating on several international research projects while travelling.

October 2013 – October 2015

IPhT – CEA Saclay: Post-Doc Research Fellow.

- FP7 Plexmath Project for the development of a mathematical framework for multilayer networks.

February 2013 – September 2013

Alma Mater Studiorum Università di Bologna: Post-Doc Research Fellow.

February 2012 – July 2012

ETH Zürich – Chair of Computational Social Science: Visiting student.

January 2010 – February 2013

Alma Mater Studiorum Università di Bologna: PhD in Physics.

Activity: Statistical modelling of human mobility based on the analysis of a database of over 10^8 private cars' GPS trajectories recorded by Octo Telematics S.p.A.

- Spinner 2013 Grant for technology transfer projects: Development of a GPS data assimilation software for real-time traffic analysis; in partnership with MetaSystem Group – Octo Telematics S.p.A. (Aug. 2010 – Mar. 2011)

November 2005 – October 2009

Alma Mater Studiorum Università di Bologna: Master in Theoretical Physics,
Final mark: 110/110 with distinction.

September 2004 – June 2005

Université Joseph Fourier de Grenoble: Erasmus Exchange Programme.

September 2002 – October 2005

Università degli studi di Parma: Bachelor's in physics,
Final mark: 110/110 with distinction.

SKILLS

Languages:

- Native language: Italian.
- Good knowledge of English (C1 level certificate), French, and Spanish.
- Basic knowledge of German (A2 level).

Computer skills:

- Good knowledge of Python, C++, Matlab, Objective-C, LaTeX.
- Basic knowledge of R, MySQL, MongoDB

Project Management Skills:

- Training on Project Management and Fund Raising for Innovation Projects, as part of the activities in support of the Spinner 2013 technological transfer Grant.
- Responsible of producing work-package deliverables in E.U. projects (Plexmath, BigData4ATM) and for the technical presentations with stakeholders and commissioners (BigData4ATM).
- WP leader in a E.U. project (inDICes)
- Training on Leadership, Privacy and Oral Communication at FBK.

SCIENTIFIC PUBLICATIONS

Monetization in online streaming platforms: an exploration of inequalities in Twitch.tv,
A. Houssard, F. Pilati, M. Tartari, P.L. Sacco, **R. Gallotti**
Scientific Reports 13 (1), 1103 (2023).

Does big data help answer big questions? The case of airport catchment areas & competition,
N. Adler, A. Brudner, **R. Gallotti**, F. Privitera, J.J. Ramasco
Transportation Research Part B: Methodological 166, 444-467 (2022).

Fast deliberation is related to unconditional behaviour in iterated Prisoners' Dilemma experiments,
E. Montero-Porras, T. Lenaerts, **R. Gallotti**, J. Grujic
Scientific Reports 12 (1), 20287 (2022).

The voice of few, the opinions of many: evidence of social biases in Twitter COVID-19 fake news sharing,
P. Castioni, G. Andrighetto, **R. Gallotti**, E. Polizzi, M. De Domenico
Royal Society Open Science (2022).

Individual risk perception and empirical social structures shape the dynamics of infectious disease outbreaks,
V. d'Andrea, **R. Gallotti**, N. Castaldo, M. De Domenico
PLoS Computational Biology 18 (2), e1009760 (2022).

Epidemic proximity and imitation dynamics drive infodemic waves during the COVID-19 pandemic,
V. d'Andrea, O. Artime, N. Castaldo, P. Sacco, **R. Gallotti**, M. De Domenico
Physical Review Research 4 (1), 013158 (2022).

Living in a pandemic: changes in mobility routines, social activity and adherence to COVID-19 protective measures,
L. Lucchini, S. Centellegher, L. Pappalardo, **R. Gallotti**, F. Privitera, B. Lepri, M. De Nadai

Scientific reports **11** (1), 1-12 (2021).

Complex urban systems: challenges and integrated solutions for the sustainability and resilience of cities,

R. Gallotti, P. Sacco, M. De Domenico
Complexity (2021).

Emergence of knowledge communities and information centralization during the COVID-19 pandemic,

P.L. Sacco, **R. Gallotti**, F. Pilati, N. Castaldo, M. De Domenico
Social Science & Medicine **285**, 114215 (2021).

Potential-driven random walks on interconnected systems,

B. Benigni, **R. Gallotti**, M. De Domenico
Physical Review E **104** (2), 024120 (2021).

Critical behavior in interdependent spatial spreading processes with distinct characteristic time scales,

P. Castioni, **R. Gallotti**, M. De Domenico
Communications Physics **4** (1), 1-10 (2021).

Quantifying efficient information exchange in real network flows,

G. Bertagnolli, **R. Gallotti**, M. De Domenico,
Communication Physics **4** (1), 1-10 (2021).

Unraveling the hidden organisation of urban systems and their mobility flows,

R. Gallotti, G. Bertagnolli, M. De Domenico,
EPJ Data Science **10** (3) (2021).

Assessing the risks of “infodemics” in response to COVID-19 epidemics,

R. Gallotti, F. Valle, N. Castaldo, P. Sacco, M. De Domenico,
Nature Human Behavior **4**: 1285 (2020).

Effectiveness of dismantling strategies on moderated vs. unmoderated online social platforms,

O. Artime, V. d'Andrea, **R. Gallotti**, P. L. Sacco, M. De Domenico,
Scientific Reports **10**: 14392 (2020)

Scaling in the recovery of urban transportation systems from massive events,

A. Bassolas, **R. Gallotti**, F. Lamanna, M. Lenormand, J.J. Ramasco,
Scientific reports **10**: 2746 (2020).

Effects of homophily and academic reputation in the nomination and selection of Nobel laureates,

R. Gallotti, M. De Domenico
Scientific reports **9**: 17304 (2019).

A quantitative description of the transition between intuitive altruism and rational deliberation in iterated Prisoner’s Dilemma experiments,

R. Gallotti, J. Grujic,
Scientific Reports **9**: 17046 (2019).

Hierarchical organization of urban mobility and its connection with city livability,

A. Bassolas, H. Barbosa-Filho, B. Dickinson, X. Dotiwalla, P. Eastham, **R. Gallotti**, G. Ghoshal, B. Gipson, S. A Hazarie, H. Kautz, O. Kucuktunc, A. Lieber, A. Sadilek, J.J Ramasco,
Nature Communications **10**: 4817 (2019).

How ants move: collective and individual scaling properties,

R. Gallotti, D. R. Chialvo,

Journal of The Royal Society Interface **15** (143): 20180223 (2018).

Tracking random walks,

R. Gallotti, R. Louf, J.-M. Luck, M. Barthelemy,
Journal of The Royal Society Interface **15** (139): 20170776 (2018).

New data sources to study airport competition,

R. Gallotti, M. Fuster, J. J. Ramasco,
Proceedings of the SESAR Innovation Days 2017 (2017).

A stochastic model of randomly accelerated walkers for human mobility,

R. Gallotti, A. Bazzani, S. Rambaldi, M. Barthelemy,
Nature Communications **7**: 12600 (2016).

Lost in transportation: Information measures and cognitive limits in multilayer navigation,

R. Gallotti, M.A. Porter, M. Barthelemy,
Science Advances **2** (2): e150044 (2016).

Understanding the variability of daily travel-time expenditures using GPS trajectory data,

R Gallotti, A Bazzani, S Rambaldi,
EPJ Data Science **4** (1): 1-14 (2015).

The multilayer temporal network of public transport in Great Britain,

R. Gallotti, M. Barthelemy,
Scientific Data **2**: 140056 (2015).

Anatomy and efficiency of urban multimodal mobility,

R. Gallotti, M. Barthelemy,
Scientific Reports **4**: 6911 (2014).

Entropic measures of individual mobility patterns,

R. Gallotti, A. Bazzani, M. Degli Esposti and S. Rambaldi,
Journal of Statistical Mechanics: Theory and Experiment (10): P10022 (2013).

Towards a statistical physics of human mobility,

R. Gallotti, A. Bazzani and S. Rambaldi,
International Journal of Modern Physics C **23** (09): 1250061 (2012).

Towards congestion detection in transportation networks using GPS data,

A. Bazzani, B. Giorgini, **R. Gallotti**, L. Giovannini, M. Marchioni and S. Rambaldi,
Proceedings of the Third International Conference on Social Computing (2011).

Now casting of traffic state by GPS data. The metropolitan area of Rome,

A. Bazzani, B. Giorgini, L. Giovannini, **R. Gallotti** and S. Rambaldi,
MIPRO, 2011 Proceedings of the 34th International Convention (2011).

Statistical Laws in Urban Mobility from microscopic GPS data in the area of Florence,

A. Bazzani, B. Giorgini, S. Rambaldi, **R. Gallotti** and L. Giovannini,
Journal of Statistical Mechanics: Theory and Experiment (05): P05001 (2010).

Stiff knots,

R. Gallotti, O. Pierre-Louis,
Physical Review E **75** (3): 031801 (2007).

BOOKS AND CHAPTERS

Multilayer Network Science: From Cells to Societies,
O. Artime, B. Benigni, G. Bertagnolli, V. d'Andrea, **R. Gallotti**, A. Ghavasieh, S. Raimondo, M. De
Domenico
Elements in Structure and Dynamics of Complex Networks. Cambridge University Press (2022)

Big data: a new perspective on cities,
R. Gallotti, T. Louail, R. Louf and M. Barthelemy,
Big Data over Networks, 247. Cambridge University Press (2015)

SPEAKER IN CONFERENCES AND SEMINARS

Social norms to counteract misinformation in humane-AI hybrid systems
2022 @ ITAL_IA 22, Workshop AI per Cybersecurity

Opportunities and limitations of mobility flow data
2022 @ SLIDES Workshop

The distorting lens of human mobility data
2022 @ CCS 2022
@ PHYSMO Workshop

Assessing the risks of infodemics" in response to COVID-19 epidemics".
2021 @ EUSN 2021
@ IC2S2 2021
@ Networks2021
@ AMLD2021 – AI & the response to COVID19
@ CompleNet Live 2021
2020 @ CCS2020
@ NetSci2020
@ CWTS Webinar: Doing science in times of crisis

Il fenomeno delle fake news legate alla pandemia
2020 @ WMF: Start The Future

Collective effects of individual decisions – the case of the Nobel Prize
2020 @ CCS2020: Success In Science Satellite (invited)
2020 @ NetSciX
2019 @ CCS19
2019 @ IC2S2 2019

Disentangling activity-aware human flows reveals the hidden functional organization of urban systems
2020 @ CCS2020: Complex-Space Satellite
2020 @ NetSci2020
2020 @ NetSciX
2019 @ NetMob19

Share precise location: a natural experiment on Twitter users' privacy concerns
2018 @ CCS18

How ants move individual and collective scaling properties
2018 @ CCS18

Reconstructing European passengers' flow network from geo-located tweets
2018 @ NetSci18: "Social Systems" parallel session

New data sources to study airport competition
2017 @ SIDS17

Estimating aviation passengers flows and airports catchment areas from geo-located tweets
2017 @ CCS17: "Infrastructure, Planning and Environment" parallel session

The emergence of income inequality in a randomly varying landscape
2017 @ ComSoTec Workshop

Biases and errors in the temporal sampling of random movements
2017 @ NetMob17
2017 @ CCS17: "Infrastructure, Planning and Environment" parallel session

Why human mobility is not a Lévy flight
2017 @ The Company of Biologists: Current status and future directions of Lévy walk research Workshop
2016 @ Instituto de Física Interdisciplinar y Sistemas Complejos, Mallorca: IFISC seminar
2016 @ CCS16: "Urban" parallel session

Human mobility: Lévy flights or accelerated walkers?
2015 @ CCS15: "Symposium in Urban Systems" satellite

Modelling decision times in game theory experiments
2018 @ BiFi International Conference
2017 @ CCS17: "Cognition and Linguistics" parallel session
2015 @ Instituto Interdisciplinario en Economía Política, Buenos Aires (Miguel Virasoro)

Lost in transportation: When public transport maps are too complex for our brain
2015 @ Institut de Systèmes Complexes, Paris: Quanturb Seminar
@ University of Oxford: Networks Journal Club (Mason Porter)
@ City University London: Data Natives workshop (Andrea Baronchelli)
@ NetSci15: "Urban Networks" parallel session
@ CCS15: "Complexity in infrastructure, Planning & Environment" parallel session

My experience with Scientific Data
2015 @ Institut de Systèmes Complexes, Paris: SOData III conference

Why travel time expenditures are not constant
2014 @ ECCS14: "Complexity in infrastructures, environment, cities" parallel session

Anatomy of urban multi-modal mobility
2014 @ University of Oxford: Networks Journal Club (Mason Porter)
@ Imperial College London (Henrik Jensen)
@ ECCS14: "Complexity in infrastructures, environment, cities" parallel session

Entropic measures of individual mobility patterns
2013 @ ECCS13: "Complexity Science and Transport Systems" satellite

REVIEWING ACTIVITY

Member of the PLoS ONE editorial board.
Handling editor for Frontiers in Public Health.
Review editor for Urban Science, part of the journal Frontiers in Built Environment.

Review editor for *Frontiers in Complex Systems*.

Reviewer for: *Nature Communications*, *Science Advances*, *Nature Human Behaviour*, *Physical Review Letters*, *Communication Physics*, *Scientific Data*, *Big Data & Society*, *Scientific Reports*, *Euro Physics Journal Data Science*, *Frontiers in Physics*, *PLoS ONE*, *Journal of Transport Geography*, *IEEE Transactions on Intelligent Transportation Systems*, *Physical Review E*, *Journal of Statistical Mechanics: Theory and Experiment*, *Journal of Complex Networks*, *Social Network Analysis and Mining*, *Environment and Planning B*, *Transport Policy*, *MDPI Data*, *International Journal of Modern Physics C*, *International Journal of Geo-Information*.

Member of the program committee: *Complex Networks 2021*

TEACHING ACTIVITY

Lecture on *Measuring the Covid-19 infodemic at scale: Opportunities and Implications* in the course “*Digital Society: Ethical, Societal and Economic Challenges*”, Chair of Computational Social Science, ETH Zurich (2022).

Supervision of 1 PhD Student in Computer Science, University of Trento (2022-2024).

Supervision of 1 PhD Student in Physics, University of Bologna (2021-2023).

Supervision of 1 Master Thesis in Data Science, Politecnico di Torino (2022-2023).

Supervision of 1 Master Thesis in Physics, University of Trento (2022-2023).

Supervision of 3 Master Thesis in Data Science, University of Trento (2022).

Supervision of 4 Student Intern in Data Science, University of Trento (2020-2022).

Lectures on *Transportation Networks* and *Human Mobility Networks* in the course “*Network Science: Theory and Lab*”, master’s in Data Science, University of Trento (2021).

Coordinator of the group activities, Mediterranean School of Complex Networks (2019, 2022).

Co-Supervision of 2 Master Thesis, IFISC Mallorca (2018).

Co-Supervision of 2 Student Interns of the Summer Undergraduate Research Fellowships, IFISC Mallorca (2017-2018).

Coordinator of the group activities, YRX2017 Workshop in Palma de Mallorca (2017).

Moderator of the wiki platform promoting the groups' self-organization, YRNCS Workshop in Lucca (2014).

Lectures on *Information Entropy* in the course of “*Complex Systems*”, bachelor’s in Physics, University of Bologna (2012).

Lecture on *Kinematic waves in single lane traffic flow* in the course of “*Self-Organized Traffic Flow and Human Coordination in Space and Time*”, Chair of Computational Social Science, ETH Zurich (2012).

Lectures on *Applications of Network Theory in Data Analysis* in the course of “*Data Analysis*”, Graduate School in Medical Physics, University of Bologna (2011).

Lectures on *Linear Algebra* in the course of “*Physics*”, bachelor’s in Computer Science, University of Bologna (2010).

ORGANIZATIONAL EXPERIENCES:

October 2022: Co-organizer of the UrbanSys Satellite at the Conference on Complex Systems

June 2022: Local organizer of the Mediterranean School of Complex Networks.

October 2021 – now: Elected member of the Conference on Complex Systems Steering Committee.

October 2021: Organizer of the UrbanSys Satellite at the Conference on Complex Systems

December 2020: Co-organizer of the *MIX-NEXT* Satellite at the Conference on Complex Systems

September 2020: Co-organizer of the UrbanNet Satellite at the Network Science Conference.

October 2019: Co-organizer of the UrbanSys Satellite at the Conference on Complex Systems.

September 2019: Local organizer of the Mediterranean School of Complex Networks.

July 2019: Co-organizer of the CCS/Italy conference (Poster Session Chair).

October 2017 – now: Elected member of the Complex Systems Society council.

June 2017: Co-organizer of the YRX2017 Workshop in Palma de Mallorca (ES).

2016 – 2018: member of the French interdisciplinary scientific collective EIGHTIES of early researchers interested in quantitative urbanism (labelled and funded by the Réseau national des systèmes complexes (RNSC) and the LaBeX Dynamite).

September 2014: Co-organizer of the YRNCS Workshop in Lucca (IT).

September 2007 – September 2008: Member of the municipal young consult of Crema (IT) and treasurer for the music and arts festival Artshot 2008.

March 2004 – October 2005: Member of the physics course council, University of Parma (IT).

AWARDS

- AVIS Prize for best PhD Thesis (2011)
- Best Talk Award - CompleNet Live conference (2021)

SCIENCE DISSEMINATION AND MEDIA COVERAGE

(for the project “COVID-19 Infodemics Observatory” and the paper “Assessing the risks of infodemics in response to COVID-19 epidemics”)

- FBK Press Release (10/03/20)
- Il Trentino (in Italian; 10/03/20)
- **La Repubblica** (in Italian; 11/03/20)
- **Wired** (in Italian; 11/03/20)

- Galileo Net (in Italian; 11/03/20)
- Mapbox Blog (12/03/20)
- TGR Trento (13/03/20)
- **Il Sole 24 ore** (in Italian; 15/03/20)
- **Corriere della Sera** (in Italian; 15/03/20)
- Huffington Post (in Italian; 15/03/20)
- **The Washington Post** (17/03/20)
- **Sky TG 24** (in Italian; 19/03/20)
- Poynter (19/03/20)
- Empirical Data Blog (19/03/20)
- **Tortoise media** (23/03/20)
- **El País** (in Spanish; 26/03/20)
- Fort Worth Star-Telegram (27/03/20)
- **NBC News** (27/03/20)
- European Data Journalism Blog (31/03/20)
- **Smithsonian Magazine** (09/04/20)
- Sunday Times South Africa (09/04/20)
- infobae (in Spanish, 10/04/20)
- Independent Online South Africa (17/04/20)
- Prima Bergamo (in Italian, 18/04/20)
- The Rakyat Post Malaysia (20/04/20)
- The South African (21/04/20)
- **Esquire** (25/04/20)

(for the paper “Effects of homophily and academic reputation in the nomination and selection of Nobel laureates”)

- FBK Press Release (13/12/19)
- L’adigetto.it (in Italian; 13/12/19)
- Giornale del Trentino (in Italian; 13/12/19)
- ANSA (in Italian; 13/12/19), picked up by several automatic press aggregators.

(for the paper “Hierarchical organization of urban mobility and its connection with city livability”)

- FBK Press Release (30/10/19)
- L’adigetto.it (in Italian; 30/10/19)
- Google AI blog post (12/11/19)
- TechCrunch Blog (03/04/20)

- **La Repubblica** (in Italian; 03/04/20)
- **Il Corriere della Sera** (in Italian; 06/04/20)

(for the paper “*How ants move: collective and individual scaling properties*”)

- Interview for the scientific show “Meteo: temps i natura” of the Balearic Island’s television IB3 (in Spanish; 18/07/18)

(for the paper “*Lost in transportation: Information measures and cognitive limits in multilayer navigation*”)

- University of Oxford press release (19/02/16), which was in turn posted on the Oxford Science Blog (22/02/16)
- The University of Oxford press release was picked up by Phys.org (2/19/16), EurekAlert! Science News (19/02/16), Science Daily (19/02/16), LaboratoryEquipment.com (22/02/16), and many other sources.
- Blurb from the Mathematical Institute at University of Oxford (19/02/16)
- **The Guardian** (19/02/16)
- **The Daily Mail** (19/02/16)
- **Motherboard** (from Vice) (19/02/16)
- Science World Report (19/02/16)
- Lenta.ru (in Russian; 20/02/16)
- Improbable Research blog (21/02/16)
- Sputnik International (21/02/16), for which there is also a French version
- Mind the Post blog (21/02/16)
- KIJK Magazine (in Dutch; 22/02/16)
- Pacific Standard (22/02/16)
- City Metric (22/02/16)
- Pysch Central (22/02/16)
- Medical Daily (22/02/16)
- SEIntelligence (in French; 24/02/16)
- Le PLM Ouvert (in French; 25/02/16)
- CityLab (from **The Atlantic**; 25/02/16)
- The CityLab article was picked up (in modified form) by **Business Insider** (27/02/16) and presumably in other venues.
- Top Santé (in French; 25/02/16)
- Research Design Connections blog (26/02/16)
- Bustle (26/02/16)
- Mental Floss (26/02/16)
- Engenhariacivil.com (in Portuguese; 26/02/16)

- Environmental Design Research Association (26/02/16)
- The Oxford Student (OxStu) (27/02/16)
- **Le Monde** (in French; 01/03/16)
- Sapo24 (in Portuguese; 01/03/16)
- The Wonk Blog in **The Washington Post** (03/03/16)
- The article in The Washington Post was picked up by the **World Economic Forum** (07/03/16)
- **Here 360** (25/04/16)