

# Rodolfo METULINI, PHD



## PERSONAL DATA:

---

EMAIL: [rodolfo.metulini@unibg.it](mailto:rodolfo.metulini@unibg.it)  
LANGUAGES: English (Fluent), Italian (Native speaker)  
IT: Windows, Office, R, RStudio, RMarkdown, LaTeX  
WEBSITE: <https://sites.google.com/unibg.it/rodolfo-metulini/bio?authuser=0>

## SHORT BIO:

---

By September 2025, I serve the Department of Economics at the University of Bergamo as **Associate Professor**. In the past, I served University of Bergamo as a Tenure Track Assistant Professor (Sep 2022, Aug 2025), University of Salerno (Assistant Professor, Jul 2019 - Jul 2022), University of Brescia (Post-Doc, Lug 2016 - Giu 2019), S.Anna Pisa (Post-Doc, Sep 2015 - Jul 2016) and IMT School for Advanced Studies (Post-Doc, Jun 2013 - Sept 2015).

I did my Bachelor and my Master in Statistics and Economics (Dept. of Statistical Sciences *P. Fortunati*) at University of Bologna, and I obtained there, in 2013, a Phd in Statistical Methodology for the Scientific Research.

I am the Principal Investigator (PI) of the **PRIN/PNRR project "SIGNUM: Study of mobile phone siGNals for the evalUation of the interconnections between Mobility and the environment in Lombardia "** (CUP F53D23010910001).

My research activity pertains with the **statistical analysis of flows and movements**.

- In **Sports Analytics**, where, to determine the probability to win the game and each player's marginal contribution to win, the comprehension of the complex dynamic of the players' movements on the court is of fundamental importance. I contribute by proposing statistical approaches based on matching Statistical Learning with Game Theory methods to assess the role of players movements and their position at the moment of their shot on the players and team performance.
- In **Traffic Management** for urban areas, where, to gather information on origin-destination traffic flows and people movements, I match, analyse and model different sources of **mobile phone data**. In my works, adapted versions of time series models for complex seasonalities are matched with functional data methods to cluster curves to shed lights on the dynamic of traffic flows and their regularities
- In **International Trade**, to understand the dynamics of the movements of goods between sectors and between countries. Origin-Destination and Input-Output matrices are analysed by means of the Gravity Model along with a Spatial Interaction approach, and a forecast (in case of missing data, or for counterfactual analysis) is obtained by proposing adaptations of Matrix Completion methods.

I have published in several international journals (Statistical Methods & Applications, AStA Advances in Statistical Analysis, Scientific Reports, Physica A: Statistical Mechanics and its Applications, Journal of Applied Statistics, Italian Journal of Applied Statistics, Socio-Economic Planning Sciences, Electronic Journal of Applied Statistical Analysis, Statistics & Applications, Stochastic Environmental Research and Risk Assessment, Optimization Letters, Annals of Operations Research, Social Indicator Research, Journal of Quantitative Analysis in Sports, PlosOne, Econometrics, The World Economy, Natural Hazards and Earth System Sciences, Advances in Water Resources, Economia Politica).

## ACTUAL COMMITMENT:

---

SEP 2025 - | Associate Professor in Statistica per la Ricerca Sperimentale e Tecnologica (STAT-ONGOING 01/B) at **Department of Economics - University of Bergamo**.

## PAST COMMITMENTS:

---

SEP 2022 - | Assistant Professor (RTD-B) in Statistica per la Ricerca Sperimentale e Tecnologica  
AUG 2025 | (STAT-01/B) at **Department of Economics - University of Bergamo**.

JUL 2019 - | Assistant Professor (RTD-A) at **Department of Economics & Statistics - University of Salerno**, Fisciano (SA).  
JUL 2022

JUL 2018 - | Post-Doc at **Department of Economics & Management - University of Brescia**, Brescia. Tutor: Prof. Maurizio Carpita; Involved project: BODaI (<http://bodai.unibs.it/>),  
JUN 2019 | BDsports (<http://bodai.unibs.it/bdsports/>)

JUL 2016 - | Post-Doc at **Department of Economics & Management - University of Brescia**, Brescia. Tutor: Prof. Paola Zuccolotto; Involved project: BODaI (<http://bodai.unibs.it/>),  
JUN 2018 | BDsports (<http://bodai.unibs.it/bdsports/>)

OCT 2015 - | Post-Doc at **Institute of Economics - Scuola Superiore S.Anna**, Pisa. Tutor:  
JUN 2016 | Prof. Giorgio Fagiolo; Involved project: ISIGrowth (Horizon 2020 project No 649186).

SEP 2014 - | Post-Doc at **IMT School for Advanced Studies**, Lucca. Tutor: Prof. Massimo  
SEP 2015 | Riccaboni; Involved projects: Crisislab (EU FP7 & Horizon 2020); ViWaN (FIRB - RBFR12BA3Y)

JUL 2014 - | Guest Scholar at **IMT School for Advanced Studies**, Lucca. Tutor: Prof. Massimo  
AUG 2014 | Riccaboni; Involved projects: Crisislab (EU FP7 & Horizon 2020); ViWaN (FIRB - RBFR12BA3Y)

JUN 2013 - | Post-Doc at **IMT School for Advanced Studies**, Lucca. Tutor: Prof. Massimo  
JUN 2014 | Riccaboni; Involved projects: Crisislab (EU FP7 & Horizon 2020); ViWaN (FIRB - RBFR12BA3Y)

## EDUCATION:

---

NOV 2009 - | PhD in STATISTICAL METHODOLOGY FOR THE SCIENTIFIC RESEARCH, **Department of Statistics - University of Bologna**, Bologna.  
FEB 2013 | Thesis title: "Spatial Gravity Models for the Analysis of International Trade"  
Supervisor: Prof. ssa Rosa BERNARDINI PAPALIA

JAN 2006 - | Master of Science Degree in STATISTICS AND ECONOMICS, 107/110. **Department of Statistics - University of Bologna**, Bologna  
MAR 2008 | Thesis title : "Struttura e delocalizzazione delle imprese del settore meccanico in Emilia-Romagna"  
Supervisor: Prof. Carlo FILIPPUCCI

OCT 2002 - | Bachelor Degree in STATISTICA E INFORMATICA PER L'AZIENDA, 101/110. **Department of Statistics - University of Bologna**, Bologna  
JAN 2006 | Thesis title: "La Customer Satisfaction sui clienti della Pulirapida S.r.l."  
Supervisor: Prof. ssa Cristina BERNINI

## NATIONAL SCIENTIFIC QUALIFICATION:

---

2023

Abilitazione scientifica nazionale alle funzioni di professore universitario di seconda fascia (D.D. 553/2021 come rettificato da D.D. 589/2021) per il settore concorsuale 13/D1 (GSD: 13/STAT-01) (valid from 01/12/2023 to 01/12/2034)

## PAPERS IN INTERNATIONAL JOURNALS:

---

1. Biancalani, F., Gnecco, G., Metulini, R., Riccaboni, M. (2024). **The Impact of the EU Emissions Trading System on CO<sub>2</sub> Emissions: A Matrix Completion Analysis**; Scientific Reports 14, 19676.  
doi: 10.1038/s41598-024-70260-6
2. Carpita, M., De Luca, G., Metulini, R., Zuccolotto, P. (2024). **Traffic flows time series in a flood-prone area: modeling and clustering on extreme values with a spatial constraint**. Stochastic Environmental Research and Risk Assessment. Vol. 38, pp. 3109–3125  
doi: 10.1007/s00477-024-02735-x
3. Perazzini, S., Metulini, R., Carpita, M. (2024). **Integration of flows and signals data from mobile phone network for statistical analyses of traffic in a flooding risk area**. Socio-Economic Planning Sciences. vol. 90, pp. 101747.  
doi: 10.1016/j.seps.2023.101747
4. Metulini, R., Carpita, M. (2024) **Modeling and forecasting traffic flows with mobile phone big data in flooding risk areas to support a data-driven decision making**; "Annals of Operations Research", Vol. 342, pp. 1629–1654  
doi: 10.1007/s10479-023-05195-8
5. Biancalani, F., G. Gnecco, R. Metulini, and M. Riccaboni (2024). **Prediction of annual CO<sub>2</sub> emissions at the country and sector levels, based on a matrix completion optimization problem**. Optimization Letters. Vol. 18(9), pp. 2203–2219  
doi: 10.1007/s11590-023-02052-2
6. Perazzini, S., Metulini, R. and Carpita, M. (2023). **Statistical indicators based on mobile phone and street maps data for risk management in small urban areas**. Statistical Methods & Applications. Vol. 33(4), pp. 1051–1078.  
doi: 10.1007/s10260-023-00719-9
7. Biancalani, F., Gnecco, G., Metulini, R. (2023), **The relationship between players' average marginal contributions and salaries: an application to NBA basketball using the generalized Shapley value**; "Italian Journal of Applied Statistics". vol. 35(2), pp. 1–29  
doi: 10.26398/IJAS.0035-007
8. Metulini, R., Gnecco, G., Biancalani, F., Riccaboni, M. (2023) **Hierarchical Clustering and Matrix Completion for the Reconstruction of World Input-Output Tables**. AStA Advances in Statistical Analysis. vol. 107, pp. 575–620.  
doi: 10.1007/s10182-022-00448-6
9. Metulini, R., Gnecco, G. (2023) **Measuring Players' Importance in Basketball using the Generalized Shapley Value**. Annals of Operations Research. vol. 325, pp. 441–465  
doi: <https://doi.org/10.1007/s10479-022-04653-z>
10. Facchinetti, T., Metulini, R., Zuccolotto, P. (2023). **Filtering active moments in basketball games using data from players tracking systems**. Annals of Operations Research. vol. 325, pp. 521–538  
doi: 10.1007/s10479-021-04391-8

11. Metulini, R., Carpita M. (2021). **A Spatio-Temporal Indicator for City Users based on Mobile Phone Signals and Administrative Data**. *Social Indicator Research*, 156(2), 761-781. doi: <https://doi.org/10.1007/s11205-020-02355-2>
12. Balistrocchi, M., Metulini, R., Carpita, M., and Ranzi, R. (2020). **Dynamic maps of human exposure to floods based on mobile phone data**. *Natural Hazards and Earth System Sciences*, 20, 3485–3500. doi: <https://doi.org/10.5194/nhess-20-3485-2020>
13. Metulini, R., Le Carre, M. (2020). **Measuring Sport Performances Under Pressure by Classification Trees with Application to Basketball Shooting**. *Journal of Applied Statistics*. 47:12, 2120-2135. doi: <https://doi.org/10.1080/02664763.2019.1704702>
14. Metulini, R., Manisera, M., Zuccolotto, P. (2018). **Modelling the dynamic pattern of surface area in basketball and its effects on team performance**. *Journal of Quantitative Analysis in Sports*. Vol. 14, Issue 3, pp. 117-130. doi: <https://doi.org/10.1515/jqas-2018-0041>
15. Metulini, R., Schiavo, S., Sgrignoli, P., Riccaboni, M. (2018). **The Network of Migrants and International Trade**. *Economia Politica*. Vol. 35, Issue 3, pp. 763–787. doi: <https://doi.org/10.1007/s40888-018-0106-6>
16. Metulini, R., Patuelli, R., Griffith, D.A. (2018) **A Spatial Filtering Zero Inflated Approach to the Estimation of the Gravity Model of Trade**. *Econometrics* 6(1), 9. doi: 10.3390/econometrics6010009
17. Metulini, R. (2017). **Filtering procedures for sensor data in basketball**. *Statistics & Applications*. Vol. 15, Issue 2, pp. 1-18. doi: 10.26350/999999\_000007
18. Metulini, R. (2017). **Spatio-Temporal Movements in Team Sports: A Visualization approach using Motion Charts**. *Electronic Journal of Applied Statistical Analysis* Vol. 10, Issue 03, pp. 810-832. doi: 10.1285/i20705948v10n3p810
19. De Angelis, E., Metulini, R., Bove, V., Riccaboni, M. (2017) **Virtual Water Trade and Bilateral Conflicts**. *Advances in Water Resources*, Vol. 110, pp. 549-561. doi: 10.1016/j.advwatres.2017.04.002
20. Metulini, R., Riccaboni, M., Sgrignoli, P., Zhu, Z. (2017). **The Indirect Effects of FDI on Trade: A Network Perspective**. *The World Economy*, Vol. 40, Issue 10, pp. 2193—2225. doi: 10.1111/twec.12504
21. Metulini, R., Tamea, S., Laio, F., Riccaboni, M. (2016). **The Water Suitcase of Migrants: Assessing Virtual Water Fluxes Associated to Human Migration**. *PLoS ONE* 11(4): e0153982. doi: 10.1371/journal.pone.0153982
22. Sgrignoli, P., Metulini, R., Schiavo, S., Riccaboni, M. (2015). **The relation between global migration and trade networks**. *Physica A: Statistical Mechanics and its Applications*, 417, 245-260. doi: 10.1016/j.physa.2014.09.037

## ONGOING WORKS:

---

1. Adam, R., Biancalani, F., Metulini, R., **Counterfactual Evaluation of Traffic Restriction Effects on Air Quality in Milan's Area C via Nuclear Norm-Based Matrix Completion**; Sumbitted to "Environmetrics".
2. Guerini, S.S., Metulini, R., **Forecasting Traffic Flow Time Series with Vine-Transform ARMA Copula Models**. Submitted to "Quality & Quantity"

## CHAPTERS IN EDITED BOOKS OR VOLUMES:

---

1. Perazzini, S., Metulini, R., Carpita, M. (2025). **Forecasting urban mobility using mobile phone data with VARX-DHR and Prophet models**. In: Theoretical and Applied Statistics and Demography - SIS 2024 post proceedings volume. ISBN: TBD.
2. Perazzini, S., Metulini, R., Carpita, M. (2024). **Unveiling the dynamic of traffic-crowding relation through mobile phone big data analysis**. In: Studies in Theoretical and Applied Statistics – Selected Papers of the Statistical Societies. Springer Proceedings in Mathematics & Statistics. ISBN: TBD
3. Biancalani, F., Gnecco, G., Metulini, R., Riccaboni, M. (2023). **Matrix Completion for the Prediction of Yearly Country and Industry-Level CO2 Emissions**. In: Machine Learning, Optimization, and Data Science. LOD 2022. Lecture Notes in Computer Science, vol 13810. Springer, Cham. doi: 10.1007/978-3-031-25599-1\_2
4. Metulini, R., Riccaboni, M., Serti, F. (2020). **Water-in-food, Conflicts and Refugee Movements: A Comprehensive Analysis**, in: T. Distefano (eds.), Water Resources and Economic Processes, 224-261, Routledge. ISBN: 2019978-0-367-11140-3
5. Manisera, M., Metulini, R., Zuccolotto, P. (2019). **Basketball analytics using spatial tracking data**. "New Statistical Developments in Data Science" - A. Petrucci, F. Racioppi, R. Verde (Editors), series: PROMS. ISBN: 978-3-030-21157-8
6. Patuelli, R., Linders, G.J., Metulini, R., Griffith, D.A. (2016). **The Space of Gravity: Spatial Filtering Estimation of a Gravity Model for Bilateral Trade**. Spatial Econometric Interaction Modelling, pp. 145-169. Springer. ISBN: 978-3-319-30196-9

## EDITORIALS:

---

1. Carpita, M., Metulini, R., Van Eetvelde, H. (2023). **STATISTICS FOR PERFORMANCE AND MATCH ANALYSIS IN SPORTS**. "Italian Journal of Applied Statistics", vol. 35(1), doi: 10.26398/IJAS.0035-001

## SHORT PAPERS OF CONFERENCE PROCEEDINGS WITH ISBN AND/OR DOI:

---

1. Carpita, M., Metulini, R., Migliorati, M. (2025). **Characteristic-based clustering of traffic flow time series with complex seasonality**. In: Book of papers IES 2025 - Innovation & Society: Statistics and Data Science for Evaluation and Quality, Eds. G. Boccuzzo, E. Bovo, M. Manisera, L. Salmaso, pp. 952-958.
2. Guerini, S.S., Metulini, R. (2025). **Assessing Predictive Performance of Time Series Copula Models in Traffic Flow Analysis**. In: Book of papers IES 2025 - Innovation & Society: Statistics and Data Science for Evaluation and Quality, Eds. G. Boccuzzo, E. Bovo, M. Manisera, L. Salmaso, pp. 936-943.
3. Adam, R., Biancalani, F., Metulini, R. (2025). **Traffic Restrictions and Air Quality: A Counterfactual Matrix Completion Analysis of Milan's Area C**. In: Book of papers IES 2025 - Innovation & Society: Statistics and Data Science for Evaluation and Quality, Eds. G. Boccuzzo, E. Bovo, M. Manisera, L. Salmaso, pp. 944-951.
4. Cefis, M., Metulini, R., Carpita, M. (2025). **A New Dataset for Exploring Actions of Italian Football Matches**. In: Book of papers IES 2025 - Innovation & Society: Statistics and Data Science for Evaluation and Quality, Eds. G. Boccuzzo, E. Bovo, M. Manisera, L. Salmaso, pp. 624-630.
5. Perazzini, S., Metulini, R. (2025). **Exploring Urban Mobility Patterns in Lombardia Through Advanced Analysis of Mobile Phone Data**. In: Pollice, A., Mariani, P. (eds) Methodological and Applied Statistics and Demography II. SIS 2024. Italian Statistical Society Series on Advances in Statistics. Springer, Cham. [https://doi.org/10.1007/978-3-031-64350-7\\_71](https://doi.org/10.1007/978-3-031-64350-7_71)
6. Perazzini, S., Metulini, R., Carpita, M. (2024) **Analysis of urban dynamics and tourists' behaviour using functional data clustering** In L. Fabbris, S. Mignani, G. Tassinari (eds), Technology and Data Science for Economic and Social Development. Book of Short Papers of the ASA Bologna Conference. Supplement to Volume 35/3 of *Statistica Applicata - Italian Journal of Applied Statistics*. Padua: Cleup (pp. 347-352). DOI: [doi.org/10.26398/asaproc.0057](https://doi.org/10.26398/asaproc.0057)
7. Metulini, R., Biancalani, F., Gnecco, G. (2023) **The generalized shapley measure for ranking players in basketball: applications and future directions - CLADAG 2023 - Book of Abstracts and Short Papers**, pp. 241-244, ISBN: 9788891935632
8. Perazzini, S., Metulini, R., Carpita, M. (2023) **Functional clustering methods for space-time big data from mobile phone networks - 11th Scientific Meeting of the SIS Group "Statistics for the Evaluation and Quality in Services"**, book of short papers (eds. Andrea Bucci, Alfredo Cartone, Adelia Evangelista, Andrea Marletta), pp. 476-482, ISBN 979-12-803-3369-8; DOI 10.60984/978-88-94593-36-5-IES2023.
9. Zuccolotto, P., De Luca, G., Metulini, R., Carpita, M. (2023) **Modeling and clustering of traffic flows time series in a flood prone area - Proceedings of the Statistics and Data Science Conference**, 124-129.
10. Perazzini, S., Metulini, R., Carpita, M. (2023) **Spatio-temporal statistical analyses for risk evaluation using big data from mobile phone network - Proceedings of the Statistics and Data Science Conference**, 124-129.
11. Perazzini, S., Metulini, R., Carpita, M. (2023) **Revealing the dynamic relations between traffic and crowding using big data from mobile phone network - SIS 2023 book of short papers**, eds. Chelli, Francesco Maria; Ciommi, Mariateresa; Ingrassia, Salvatore; Mariani, Francesca; Recchioni, Maria Cristina. ISBN: to be defined
12. Metulini, R., Biancalani, F., Gnecco, G., Riccaboni, M. (2023). **Assessing the performance of nuclear norm-based matrix completion methods on CO2 emissions data - SIS 2023 book of short papers**, eds. Chelli, Francesco Maria; Ciommi, Mariateresa; Ingrassia, Salvatore; Mariani, Francesca; Recchioni, Maria Cristina. ISBN: to be defined

13. Metulini, R., Gnecco, G., Biancalani, F., Riccaboni, M. (2022). **A Statistical Approach for the Completion of Input-Output Tables** - SIS 22 book of short papers, eds. Antonio Balzanella, Matilde Bini, Carlo Cavicchia, Rosanna Verde. Pearson, ISBN: 9788891932310
14. Metulini, R., Carpita, M. (2022). **Forecasting Traffic Flows with Complex Seasonality using Mobile Phone Data** - IES 22, INNOVATION AND SOCIETY 5.0: STATISTICAL AND ECONOMIC METHODOLOGIES FOR QUALITY ASSESSMENT, book of short papers, eds. Rosaria Lombardo, Ida Camminatiello, Violetta Simonacci. ISBN 978-88-94593-36-5 (online)
15. Carpita, M., Metulini, R. (2021). **Modelling the spatio-temporal dynamic of traffic flows with gravity models and mobile phone data**, ASA 2021 Statistics and Information Systems for Policy Evaluation, Edited by: Bertaccini, B.; Fabbris, L.; Petrucci, A. DOI:10.36253/978-88-5518-461-8.19
16. Metulini, R., Giordano, F. (2021) **A screening procedure for high-dimensional autologistic models**. Book of short papers - SIS 2021. Eds. Cira Perna, Nicola Salvati, Francesco Schirripa Spagnolo (Pearson). ISBN 9788891927361,
17. Carpita, M., Metulini, R., (2020), **Dynamic crowding maps with mobile phone big data**. Data Science & Social Research 2020, in BoA: Antonucci L., Kostiuk Y. eds. (2020). Book of Abstracts, 3<sup>rd</sup> international conference on Data Science & Social Research, ISBN 978-886629-051-3
18. Metulini R., Carpita M. (2019) **The HOG-FDA Approach with Mobile Phone Data to Modeling the Dynamic of Peoples Presences in the City**. In Bini M., Amenta P., D'Ambra A., Camminatiello I. (Eds.), IES 2019 Innovation & Society - Statistical Evaluation Systems at 360: Techniques, Technologies and new Frontiers Book of Abstracts, Cuzzolin Editing.
19. Facchinetti, T., Metulini, R., Zuccolotto, P. (2019) **Detecting and classifying moments in basketball matches using sensor tracked data**. SIS 2019 - Smart Statistics for Smart Applications - Book of short papers, editors: G. Arbia, S. Peluso, A. Pini, G. Rivellini. ISBN 9788891915108
20. Metulini, R., Carpita, M. (2019) **A strategy for the matching of mobile phone signals with census data**. SIS 2019 - Smart Statistics for Smart Applications - Book of short papers, editors: Giuseppe Arbia, Stefano Peluso, Alessia Pini, Giulia Rivellini. ISBN 9788891915108
21. Manisera M., Metulini R., Sandri M., Zuccolotto P. (2019), **Basketball Spatial Performance Indicators**. Data Science & Social Research 2019, Book of Abstracts, ISBN: 9788894312096
22. Metulini R., Carpita, M. (2019), **Human Activity Spatio-Temporal Indicators using Mobile Phone Data**. Data Science & Social Research 2019, Book of Abstracts, ISBN: 9788894312096
23. Metulini R. (2018), **Modelling the dynamic pattern of surface area in basketball and its effects on team performance**. Book of abstract, COMPSTAT 2018. ISBN: 978-9963-2227-3-5
24. Metulini R., (2018), **Players Movements and Team Shooting Performance: a Data Mining approach for Basketball**. Book of short papers SIS2018, ISBN-9788891910233. Publisher: Pearson, Editors: Antonino Abbruzzo, Eugenio Brentari, Marcello Chiodi e Davide Piacentino.
25. Metulini R., Manisera M., Zuccolotto P. (2017), **Space-Time Analysis of Movements in Basketball using Sensor Data**. In *Statistics and Data Science: new challenges, new generations. Proceedings of the SIS 2017 Conference of the Italian Statistical Society*, A. Petrucci and R. Verde (Eds.) , Firenze University Press, pp. 701-706. ISBN (on line) 978-88-6453-521-0.
26. Metulini, R., Manisera, M., Zuccolotto, P. (2017), **Sensor Analytics in Basketball**. In *Proceedings of MathSport International*, C. De Francesco, L. De Giovanni, M. Ferrante, G. Fonseca, F. Lisi, S. Pontarollo (Eds.), Padova University Press, pp. 265-274. ISBN: 978-88-6938-058-7.
27. Sgrignoli, P., Metulini, R., Schiavo, S., Riccaboni, M. (2013, December). **The Relation between Global Migration and Trade Networks**. In *Signal-Image Technology & Internet-Based Systems (SITIS)*, 2013 International Conference on (pp. 553-560). IEEE. ISBN: 978-1-4799-3211-5

## BOOK OF ABSTRACTS WITH ISBN OR DOI:

---

1. Metulini, R., Cefis, M.: **Some novelty on the XG model for Football Analytics**, in: EURO 2024 Conference Handbook & Abstracts: 33rd European Conference on Operational Research (EURO XXXIII), Copenhagen, Denmark, June 30 - July 3, 2024. isbn: 978-87-93458-26-0
2. Carpita, M., Metulini, R., De Luca, G., Zuccolotto, P.: **Traffic flows time series clustering in flooding risk areas using origin-destination mobile phone data**, ITISE 2022, Proceedings of Abstract, Grn Canaria, Spain, 27–30 June 2022. (eds, Olga Valenzuela, Fernando Rojas, Hector Pomares, Luis Javier Herrera, Ignacio Rojas). ISBN: 978-84-19214-24-9
3. Razdar, B., Metulini, R., Carpita, M., Vassena, G.P.M., Ranzi, R.: **Flood risk management using mobile phone data and hydrological modeling in a heavily urbanized area in Lombardy**, ICRA9, 9th International Conference on Risk Analysis, Book of Abstract, Perugia, Italy, 25–27 May 2022 (Editors: Christos Kitsos, Teresa A. Oliveira, Francesca Pierri, Marialuisa Restaino). ISBN: 978-972-674-919-6
4. Metulini, R., Carpita, M.: **A statistical approach for flood risk assessment using mobile phone traffic flows' data**, ICRA9, 9th International Conference on Risk Analysis, Book of Abstract, Perugia, Italy, 25–27 May 2022 (Editors: Christos Kitsos, Teresa A. Oliveira, Francesca Pierri, Marialuisa Restaino). ISBN: 978-972-674-919-6
5. Razdar, B., Metulini, R., Carpita, M., and Ranzi, R.: **Dynamic flood hazard maps based on traffic flow forecasts using mobile phone data**, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-3200, <https://doi.org/10.5194/egusphere-egu22-3200>, 2022
6. Metulini, R., Gnecco, G., **Players' importance in basketball and the generalized Shapley value**. 14th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2021), December 18-20 (London, UK). ISBN: 978-9925-7812-5-6
7. Metulini, R., Gnecco, G., **Players' Average Marginal Contribution in Basketball and Generalized Shapley Value**. 31st European conference on Operational Research (EURO 2021) July 11-14 (Athens, Greece). ISBN: 78-618-85079-1-3
8. Carpita, M., Metulini, R., **Dynamic crowding maps with mobile phone big data**. Antonucci L., Kostiuk Y. eds. (2020). Book of Abstracts, Third international conference on Data Science & Social Research, Bari, 10-11 December 2020. ISBN 978-886629-051-3
9. Metulini, R., Carpita, M., **Human activity spatio-temporal indicators using mobile phone data**. Second international conference on data science and social research, Paolo Mariani (eds.) 2019. ISBN: 9788894312096
10. Manisera, M., Metulini, R., Sandri, M., Zuccolotto, P., **Basketball spatial performance indicators**. Second international conference on data science and social research, Paolo Mariani (eds.) 2019. ISBN: 9788894312096
11. Metulini, R., **Modelling the dynamic pattern of surface area in basketball and its effects on team performance**. 23rd International Conference on Computational Statistics (COMPSTAT 2018). ISBN: 978-9963-2227-3-5.

## INVOLVED PROJECTS:

---

- Principal Investigator (PI) of the PRIN/PNRR project "SIGNUM: Study of mobile phone signals for the evaluation of the interconnections between Mobility and the environment in Lombardia", CUP F53D23010910001 <https://sites.google.com/view/prinsignum/home?authuser=0> (Period: 30/11/2023–30/11/2025).
- INdAM-GNAMPA 2023 project "Sviluppo di metodi di machine learning per la stima del valore Shapley e di sue generalizzazioni", code CUP\_E53C22001930001 (Period: 01/05/2023 – 30/04/2024)

- Big & Open Data Innovation Laboratory (BODaI-Lab), project nr. 03-2016, granted by Fondazione Cariplo and Regione Lombardia <https://bodai.unibs.it> (Period: 2016 – 2018)
- ISIGrowth (Horizon 2020 project No 649186) <http://www.isigrowth.eu/> (Period: 2015 – 2016)
- Crisislab (EU FP7 & Horizon 2020) <http://www.crisislab.it/> (Period: 2013 – 2015)
- ViWaN (FIRB - RBF12BA3Y) <https://watertofood.org/> (Period: 2013 – 2015)

## ORGANIZED WORKSHOPS

---

February, 19th, 2024: "Kick-Off Meeting del progetto PRIN/PNRR SIGNUM": Study of mobile phone siGNals for the evalUation of the interconnections between Mobility and the environment in Lombardia. University of Bergamo – Department of Economics, Via dei Caniana 2, 24127 Bergamo. <https://sites.google.com/view/prinsignum/events?authuser=0>

## ORGANIZED SEMINARS

---

|                        |  |
|------------------------|--|
| DECEMBER<br>12TH, 2023 | Mattia Cefis (University of Brescia) - "An Introduction to Football Data and some Statistical Tools for Football Analytics" - Statistics seminar series - Department of Economics, University of Bergamo. <a href="https://dse.unibg.it/it/eventi/mattia-cefis-mathematics-statistics-seminar-series">https://dse.unibg.it/it/eventi/mattia-cefis-mathematics-statistics-seminar-series</a>                              |
| OCTOBER<br>16TH, 2024  | Giorgio Stefano Gnecco (IMT School for Advanced Studies) - "Approximating the Shapley value in transportation network cooperative games" - Statistics seminar series - Department of Economics, University of Bergamo. <a href="https://dse.unibg.it/it/eventi/statistics-seminar-series-giorgio-stefano-gnecco-imt-lucca">https://dse.unibg.it/it/eventi/statistics-seminar-series-giorgio-stefano-gnecco-imt-lucca</a> |
| FEBRUARY<br>18TH, 2025 | Sara Selvaggia Guerini (University of Bergamo) - "Time Series Copula Models for Traffic Flows" - Brown bag seminars - Department of Economics, University of Bergamo. <a href="https://dse.unibg.it/it/eventi/brown-bag-seminars-sara-selvaggia-guerini">https://dse.unibg.it/it/eventi/brown-bag-seminars-sara-selvaggia-guerini</a>  |

## PRESENTED SEMINARS:

---

|          |   |
|----------|---|
| OCT 2022 | <b>A model for the nowcasting of traffic flows using mobile phone data</b><br>University of Bergamo - Bergamo (Italy). Chair: Dr. Tommaso Lando |
| MAR 2017 | <b>Sensor Analytics in basketball</b><br>University of Brescia - Brescia (Italy). Chair: Prof. ssa Paola Zuccolotto                             |
| JUL 2013 | <b>Spatial Econometrics and Social Networks</b><br>IMT Institute for Advanced Studies - Lucca (Italy). Chair: Prof. Massimo Riccaboni           |
| JAN 2013 | <b>Spatial Gravity Models for International Trade</b><br>Georg August University - Goettingen (Germany) . Chair: Dot. ssa Maria C. Lo Bue       |

## ORGANIZED SESSIONS AT INTERNATIONAL CONFERENCES

---

|          |  |
|----------|--|
| JUN 2025 | <b>IES 2025</b> - Innovation & Society: Statistics and Data Science for Evaluation and Quality, University of Padova, Bressanone-Brixen, Italy, June 25-27, 2025. Title: Statistical methods for traffic and the environment” (Session organized in the context of “SIGNUM” PRIN PNRR 2022 project) (organizer: Rodolfo Metulini).                         |
| SEP 2024 | <b>ASA 2024</b> - Measuring and Interpreting World Changes with Statistics, Data Science and AI. Sapienza University, Roma, 18 - 20 September, 2024. Title: Statistical and Machine Learning methods for the analysis of traffic and the environment” (Session organized in the context of “SIGNUM” PRIN PNRR 2022 project) (organizer: Rodolfo Metulini). |
| AUG 2023 | STATISTICAL METHODS FOR EVALUATION AND QUALITY: TECHNIQUES, TECHNOLOGIES AND TRENDS ( <b>IES 2023</b> ), Pescara, 30 August -1 September, 2023. Title: Statistics in Sports (organizers: Rodolfo Metulini and Marica Manisera).  |
| AUG 2023 | STATISTICAL METHODS FOR EVALUATION AND QUALITY: TECHNIQUES, TECHNOLOGIES AND TRENDS ( <b>IES 2023</b> ), Pescara, 30 August -1 September, 2023. Title: Statistics in Football (organizers: Rodolfo Metulini and Marica Manisera).  |
| MAY 2022 | 9th International Conference on Risk Analysis ( <b>ICRA9</b> ), Perugia, 25-27 May, 2022. Title: ”Statistical and Data Science Developments for Risk Assessment in Urban Areas” (organizers: Rodolfo Metulini and Maurizio Carpita).   |

## SCIENTIFIC COMMITTEES:

---

- IES 2025: Statistical Methods For Evaluation and Quality: “Innovation & Society: Statistics and Data Science for Evaluation and Quality”. Bressanone, June 25-27, 2025.
- IES 2023: Statistical Methods For Evaluation and Quality: Techniques, Technologies and Trends (T<sup>3</sup>). Pescara, August 30 – September 1, 2023. University of Chieti-Pescara ”G. D’Annunzio”
- International Conference on Advanced Water Technologies and Energy Management. 2-3 April 2018 - Cambridge, United Kingdom.
- 2nd International Conference on Applied Economics and Finance. 5-6 December, 2016 - Girne American University, Kyrenia, North Cyprus.

## ORGANIZING COMMITTEES:

---

- EAI Intetain 2023 - 14th EAI International Conference on Intelligent Technologies for Interactive Entertainment November 27-28, 2023, Lucca, Italy. IMT School for Advanced Studies (role: Publication Chair)

## MEMBER OF:

---

- Societa’ Italiana di Statistica (SIS, 2017 - ongoing)
- GRASPA (2022 - ongoing)
- GNAMPA (2021 - 2024)
- Spatial Econometric Association (SEA, 2015 - 2018)

## TEACHING:

|                   |  |
|-------------------|--|
| A.A.<br>2024/25   | <p><b>Statistica</b>, hours: 72 (9 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione - LT Informatics Engineering (with Alice Giampino)</p> <p><b>Statistica</b>, hours: 48 (6 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria e Scienze Applicate - LT Mechanical Engineering (with Lorenzo Tedesco, Mattia Cefis and Sara Selvaggia Guerini)</p>  |
| A.A.<br>2023/24   | <p><b>Statistica</b>, hours: 72 (9 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione - LT Informatics Engineering (with Alice Giampino)</p> <p><b>Statistica</b>, hours: 48 (6 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria e Scienze Applicate - LT Mechanical Engineering (with Alessandro Casa and Valeria Caviezel)</p> <p><b>Statistical Learning</b>, hours: 48 (6 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria e Scienze Applicate - LM Informatics Engineering (<b>Lecturer</b>, 2 hours. Chair: Prof. Francesco Finazzi)</p> |
| A.A.<br>2022/23   | <p><b>Statistica</b>, hours: 72 (9 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione - LT Informatics Engineering (with Alessandro Fassò)</p> <p><b>Statistica</b>, hours: 48 (6 CFU) - University of Bergamo (UNIBG) - Dipartimento di Ingegneria e Scienze Applicate - LT Mechanical Engineering (with Valeria Caviezel)</p>  |
| A.A.<br>2021/22   | <p><b>Statistica</b>, hours: 60 (10 CFU) - Dipartimento di Scienze Aziendali (DISA-MIS) - Università di Salerno</p> <p><b>Quantitative Methods for Big Data Analysis - Regression models and panel data</b>, hours: 8 - Dipartimento di Scienze Aziendali (DISA-MIS) - Università di Salerno - Short course for PhD XXVII cycle of track <i>Big Data Management (BIDAMA)</i></p>   |
| A.A.<br>2020/21   | <p><b>Statistica</b>, hours: 60 (10 CFU) - Dipartimento di Scienze Aziendali (DISA-MIS) - Università di Salerno</p> <p><b>Regression models and panel data</b>, hours: 8 - Dipartimento di Scienze Aziendali (DISA-MIS) - Università di Salerno - Short course for PhD XXVI cycle of track <i>Big Data Management (BIDAMA)</i></p>   |
| A.A.<br>2019/20   | <p><b>Strumenti Quantitativi per l'Azienda</b>, hours: 30 (6 CFU) - Dipartimento di Scienze Aziendali (DISA-MIS) - Università di Salerno</p> <p><b>Analisi Quantitativa del Rischio Finanziario</b>, hours: 30 (6 CFU) - Dipartimento di Scienze Economiche e Statistiche (DISES) - Università di Salerno</p>  |
| A.A.<br>2018/19   | <p><b>Statistica per le Decisioni Aziendali</b> (teacher assistant), hours: 40 - University of Brescia - Department of Economics and Management.<br/>Chair Professor: Prof. Eugenio Brentari.</p>  |
| A.A.<br>2017/2018 | <p><b>Practicals on Econometric Methods for Spatial and Social Networks</b>, with R - hours: 10 (Prof. <b>Ingmar Prucha</b>), Spatial Econometrics Advanced Institute (SEAI, Director: Prof. <b>Giuseppe Arbia</b>) - <b>In english</b></p> <p><b>Statistica per le Decisioni Aziendali</b> (teacher assistant), hours: 40 - University of Brescia - Department of Economics and Management.<br/>Chair Professor: Prof. Eugenio Brentari.</p>  |
| A.A.<br>2016/2017 | <p><b>Practicals on Econometric Methods for Spatial and Social Networks</b>, with R - hours: 10 (Prof. <b>Ingmar Prucha</b>), Spatial Econometrics Advanced Institute (SEAI, Director: Prof. <b>Giuseppe Arbia</b>) - <b>In english</b></p>  |

|                   |  |
|-------------------|--|
|                   | <p><b>Statistica per le Decisioni Aziendali</b> (teacher assistant), hours: 40 - University of Brescia - Department of Economics and Management.<br/>Chair Professor: Prof. Eugenio Brentari.</p>  |
| A.A.<br>2015/2016 | <p><b>Practicals on Spatial Econometrics</b>, with R , hours: 10 (Prof. <b>Anil Bera</b>) - Spatial Econometrics Advanced Institute (SEAI, Director: Prof. <b>Giuseppe Arbia</b>) - <b>In english</b></p> <p><b>Empirics of Trade</b> (lecturer)- to bachelor students, jointly with Giorgio Fagiolo (S.Anna) and Gianluca Santoni (CEPII). , hours: 4, Institute of Economics - Scuola Superiore S.Anna (Prof. Giorgio Fagiolo)</p>   |
| A.A.<br>2014/2015 | <p><b>Practicals on Econometric Methods for Spatial and Social Networks</b>, with R - hours: 10 (Prof. <b>Ingmar Prucha</b>), Spatial Econometrics Advanced Institute (SEAI, Director: Prof. <b>Giuseppe Arbia</b>) - <b>In english</b></p> <p><b>International Economics and Business</b> (lecturer) hours: 2, XXX IMT doctoral cycle - (tracks: Computer Science, Economics and Management. IMT Institute for Advanced Studies Lucca. (Prof. Massimo Riccaboni) - <b>In english</b></p> <p><b>Statistics Lab</b> for the XXX, IMT doctoral cycle. (hours:10, tracks: Computer Science, Economics and Management). IMT Institute for Advanced Studies Lucca - <b>In english</b></p> |
| A.A.<br>2013/2014 | <p><b>Practicals on Spatial Econometrics</b>, with R , hours: 20 (Prof. <b>Anil Bera</b> and <b>Ingmar Prucha</b>) - Spatial Econometrics Advanced Institute (SEAI, Director: Prof. <b>Giuseppe Arbia</b>) - <b>In english</b></p> <p><b>Statistics Lab</b> for the XXIX, IMT doctoral cycle. (hours:10, tracks: Computer Science, Economics and Management). IMT Institute for Advanced Studies Lucca. - <b>In english</b></p>  |
| A.A.<br>2012/2013 | <p><b>Practicals on Spatial Econometrics</b>, with R , hours: 20 (Prof. <b>Anil Bera</b> and <b>Ingmar Prucha</b>) - Spatial Econometrics Advanced Institute (SEAI, Director: Prof. <b>Giuseppe Arbia</b>) - <b>In english</b></p> <p><b>Statistica Economica</b> (teacher assistant), hours: 30 - University of Bologna - Department of Statistical Sciences - Chair Professor: (Prof. Carlo Filippucci.)</p>   |
| A.A.<br>2010/2011 | <p><b>Statistica Economica</b> (teacher assistant), hours: 30 - University of Bologna - Department of Statistics - Chair Professor: (Prof. Carlo Filippucci.)</p> <p><b>Metodi Quantitativi per lo Sviluppo Economico</b> (teacher assistant), hours: 30 - University of Bologna - Department of Statistics - Chair Professor: (Prof. Carlo Filippucci.)</p>   |
| A.A.<br>2009/2010 | <p><b>Statistica Economica</b> (teacher assistant), hours: 30 - University of Bologna - Department of Statistics - Chair Professor: (Prof. Carlo Filippucci.)</p> <p><b>Metodi Quantitativi per lo Sviluppo Economico</b> (teacher assistant), hours: 30 - University of Bologna - Department of Statistics. Chair Professor: (Prof. Carlo Filippucci.)</p>  |

## ATTENDED CONFERENCES:

|                         |  |
|-------------------------|--|
| SEPTEMBER 2025          | <b>CLADAG 2025 - 15th Scientific Meeting Classification and Data Analysis Group - Napoli</b> , 8 - 10 September, 2025. Presented Paper: "Characteristic-Based Fuzzy Clustering of MCS-GARCH Volatility Components in Traffic Flow Data" (with Carpita, M. and Migliorati, M.) ( <b>Invited</b> );  |
| JUNE 2025               | <b>IES 2025 - Innovation &amp; Society: Statistics and Data Science for Evaluation and Quality - Bressanone, University of Padova</b> , 25 - 27 June, 2025. One presented contribution. One organized session. Program committee member. Coauthor of 4 contributions.  |
| JUNE 2025               | <b>11th MathSport International Conference - University of Luxembourg</b> , 4 - 6 June, 2025. Presented Paper: "Statistical Analysis of Action Player Contribution in Soccer" (with Cefis, M. and Carpita, M.)   |
| APRIL 2025              | <b>SDS2025: Third Conference of the Statistics and Data Science Group of the Italian Statistical Society - University of Milan and Politecnico di Milano</b> , 2 - 3 April, 2025. Presented Paper: "Fuzzy clustering of GARCH components for traffic flow time series with complex seasonality" (with Migliorati, M. and Carpita, M.)  |
| SEPTEMBER 2024          | <b>ASA 2024 - Measuring and Interpreting World Changes with Statistics, Data Science and AI</b> , 18 - 20 September, 2024.<br>Presented Papers:<br>1) "Forecasting volatile traffic flows time series with complex seasonality using mobile phone data and GARCH models" (with Carpita, M.) ( <b>Invited</b> );<br>2) "Shapley value-based metrics for measuring the marginal contribution of players in team sports" ( <b>Invited</b> ).<br>Chair of the Session "Explainable Football Statistics" organized by Mattia Cefis.<br>Organized session: "Statistical and Machine Learning Methods for the Analysis of Traffic and the Environment". |
| JULY 2024               | <b>33rd EURO Conference, Technical University of Denmark (DTU)</b> , 30 June-3 July, 2024. Presented Paper: "Some novelty on the xG model for Football Analytics" (with Cefis, M.) ( <b>Invited</b> )  |
| JUNE 2024               | <b>SIS 2024, Università di Bari Aldo Moro</b> , 17-20 June 2024. Presented Paper: "Exploring urban mobility patterns in Lombardia through advanced analysis of mobile phone data" (with Perazzini, S.) ( <b>Invited</b> )  |
| SEPTEMBER 2023          | <b>CLADAG 2023, Università di Salerno, Fisciano (SA)</b> , 11- 13 September 2023. Presented Paper: "The generalized shapley measure for ranking players in basketball: applications and future directions" (with Biancalani, F. & Gnecco, G.) ( <b>Invited</b> )   |
| AUGUST - SEPTEMBER 2023 | <b>IES 2023, Università di Chieti e Pescara, Pescara</b> , 30 August - 1 September 2023. Presented Paper: "Functional clustering methods for space-time big data from mobile phone networks" (with Perazzini, S., Carpita, M.)   |
| JUNE 2023               | <b>SIS 2023, Università Politecnica delle Marche, Ancona</b> , 21-23 June 2023. Presented Paper: "Assessing the performance of nuclear norm-based matrix completion methods on CO2 emissions data" (with Biancalani, G., Gnecco, F., Riccaboni, M.)  |
| JUNE 2022               | <b>ITISE 2022, 27th-30th June, Gran Canaria, Spain</b> . Presented Paper: "Traffic flows time series clustering in flooding risk areas using origin-destination mobile phone data" (with M. Carpita, G. De Luca, P. Zuccolotto)  |
| JUNE 2022               | <b>SIS 2022, Università degli studi della Campania L. Vanvitelli, Caserta</b> , 22-24 June 2022. Presented Paper: "A Statistical Approach for the Completion of Input-Output Tables" (with G. Gnecco, F. Biancalani, M. Riccaboni)   |
| JUNE 2022               | <b>IDSC 2022, Catholic University, Milano</b> , 15-17 June 2022. Presented Paper: "Forecasting flood risk exposure using mobile phone traffic flows' data" (with M. Carpita)   |

- MAY 2022 | **ICRA9, Perugia**, 25-27 May 2022. Presented Paper: "A statistical approach for flood risk assessment using mobile phone traffic flows' data" (with M. Carpita) (**Invited**)
- JAN 2022 | **IES 2022, Capua**, 27-28 January 2022. Presented Paper: "Forecasting Traffic Flows with Complex Seasonality using Mobile Phone Data" (with M. Carpita)
- DEC 2021 | **CMStatistics 2021 hybrid conference, London**, 18-20 December 2021. Presented Paper: "Players' importance in basketball and the generalized Shapley value" (with G. Gnecco) (**Invited**)
- SEP 2021 | **ODS 2021 hybrid conference, Roma**, 14-17 September 2021. Presented Paper: "Modelling traffic flows with gravity models and mobile phone large data" (with M. Carpita) (**Invited**)
- SEP 2021 | **ASA 2021 on site conference, Firenze**, 6-8 September 2021. Presented Paper: "Modelling the spatio-temporal dynamic of traffic flows with gravity models and mobile phone data" (with M. Carpita)
- JUL 2021 | **EURO 2021 Hybrid conference, Athens**, 11-14 July 2021. Presented Paper: "Players' Average Marginal Contribution in Basketball and Generalized Shapley Value" (with G. Gnecco) (**Invited**)
- JUN 2021 | **SIS 2021**, 21-25 June 2021. Presented Paper: "A screening procedure for high-dimensional autologistic models" (with F. Giordano)
- DEC 2020 | **Third international conference on Data Science & Social Research (DSSR) 2020 fully virtual conference**, 10-11 December 2020. Presented Paper: "Dynamic crowding maps with mobile phone data" (with M. Carpita)
- SEP 2020 | **Mathematical and Statistical Methods for Actuarial Sciences and Finance (eMAF) 2020 remote conference**, 18-22-25 September 2020. Presented Paper: "Variable selection in high-dimensional autologistic models for failure prediction"
- JUL 2019 | **IES 2019 - STATISTICAL EVALUATION SYSTEMS AT 360°: TECHNIQUES, TECHNOLOGIES AND NEW FRONTIERS**, European University of Rome, Roma, Italy 4-5 July 2019. Presented Papers: "The HOG-FDA Approach with Mobile Phone Data to Modeling the Dynamic of People's Presences in the City" (with M. Carpita) (**Invited**)
- JUN 2019 | **SIS 2019 - Smart Statistics for Smart Applications**, Catholic University of the Sacred Heart, Milano, Italy 18-21 June 2019. Presented Papers: "Detecting and classifying moments in basketball matches using sensor tracked data" (with T. Facchinetti, P. Zuccolotto) (**Invited**)  
"A strategy for the matching of mobile phone signals with census data" (with M. Carpita) (**Invited**)
- FEB 2019 | **Second international conference on data science and social research**, 4 February 2019 - University of Milano-Bicocca; 5 February 2019 - IULM University. Presented Papers: "Basketball Spatial Performance Indicators" (with M. Manisera, P. Zuccolotto, M. Sandri)  
"Human Activity Spatio-Temporal Indicators using Mobile Phone Data" (With M. Carpita)
- OCT 2018 | **Workshop High Dimensional Small Data**, European Center for Living Technologies (ECLT), Venice, Italy, 19-20 October 2018. Presented Poster with speed presentation (5 minutes): "On Clustering Daily Mobile Phone Density Profiles"
- AUG 2018 | **23rd International Conference on Computational Statistics (COMPSTAT, 2018)**, Iasi, Romania, 28-31 August 2018. Presented paper: "Modelling the dynamic pattern of surface area in basketball and its effects on team performance" (**Invited**)

|          |  |
|----------|--|
| JUN 2018 | <b>SIS 2018 Conference of the Italian Statistical Society</b> (University of Palermo, 20-22 June 2018). Presented paper: "Players Movements and Team Shooting Performance: a Data Mining approach for Basketball" ( <b>Invited</b> )   |
| FEB 2018 | <b>Workshop: Stochastic Optimization and Data Analytics for Computational Management.</b> Bergamo (Italy). Attended only.  |
| NOV 2017 | <b>Workshop: Big Data Analytics in Sports.</b> Brescia (Italy). Attended only.   |
| JUN 2017 | <b>SIS2017.</b> Florence (Italy). Presented paper: "Space-Time Analysis of Movements in Basketbal using Sensor Data" (with M.Manisera, P. Zuccolotto)  |
| JUN 2017 | <b>MathSport International.</b> Padua (Italy). Presented paper: "Sensor Analytics in Basketball" (with M.Manisera, P. Zuccolotto)  |
| JUN 2016 | <b>Spatial Econometric Assoiation (SEA) 2016.</b> Roma (Italy). Presented paper: "A Spatial Filtering Zero - Inflated approach to the Estimation of the Gravity Model of Trade" (with R.Patuelli, D.A. Griffith)   |
| MAY 2016 | <b>Primo Simposio "Acqua Risorsa Globale.</b> Torino (Italy). Attended only.   |
| SEP 2015 | <b>European trade study group (ETSG) 2015.</b> Paris (France). Presented paper: "A Spatial Filtering Zero Inflated approach to the Estimation of the Gravity Model of Trade" (with R.Patuelli, D.A. Griffith)  |
| SEP 2014 | <b>European Conference on Complex Systems (ECCS) 2014.</b> Lucca (Italy). Presented papers: (1) "FDI and Trade: A Comparative network analysis approach" (with P.Sgrignoli, Z.Zhu and M. Riccaboni) (2) "The Virtual Water Suitcase of Migrants (3 minutes IGNITE talk, with S.Tamea, F.Laio, M.Riccaboni)"                    |
| SEP 2014 | <b>European trade study group (ETSG) 2014.</b> Munich (Germany). Presented paper: "The Migration Network effect on International Trade" (with P.Sgrignoli, S.Schiavo, M.Riccaboni)   |
| JUL 2014 | <b>Italian trade study group (ITSG) 2014.</b> Cagliari (Italy). Presented paper: "The Migration Network effect on International Trade" (with P.Sgrignoli, S.Schiavo, M.Riccaboni)  |
| AUG 2013 | <b>Regional Integration: Europe, the Mediterranean and the World Economy, ERSA.</b> Palermo (1) "Measuring spatial externalities in gravity models for international trade: a panel analysis among OECD countries" (2) "A structural analysis on Gravity of Trade regarding the possibility to remove distance from the model" |

## EDITORIAL ACTIVITY

---

Jan 2022- Feb 2023: Guest Editor of the Special Issue "Statistics for Performance and Match Analyses in Sports" in the international journal "Statistica Applicata - Italian Journal of Applied Statistics" (indexed in Scopus).

## REVIEWER FOR INTERNATIONAL JOURNALS:

---

- Papers in Regional Science (Wiley);
- PLOS One (PLOS);
- Advances in Complex Systems (World Scientific);

- Healt Economics (Wiley);
- Water Resources Research (Wiley);
- Water (MPDI);
- Sustainability (MPDI);
- Journal of European Real Estate Research (Emerland Insight) - **2 times**;
- Applied Network Science (Springer);
- Empirical Economics (Springer);
- Electronic Journal of Applied Statistical Analysis (ESE);
- International Journal of Geographical Information Science (Taylor & Francis);
- J (MDPI);
- Journal of Quantitative Analysis in Sports (De Gruyter) - **3 times**;
- Science of the Total Environment - STOTEN (Elsevier);
- Economics Bulletin;
- Journal of Sports Analytics (IOS Press) - **2 times**;
- IMA Journal of Management Mathematics (Oxford University Press);
- Journal of Sports Sciences (Taylor & Francis);
- Journal of the Korean Statistical Society (Springer);
- Journal of Risk and Financial Managenent (MDPI);
- Annals of Operations Research (Springer) - **5 times**;
- Geographical Analysis (Wiley);
- International Journal of Disaster Risk Reduction (Elsevier);
- Development Studies Research (Taylor & Francis);
- Scienze Regionali (Il Mulino);
- Socio-Economic Planning Sciences (ScienceDirect) - **2 times**;
- IEEE Transactions on Neural Networks and Learning Systems (IEEE);
- Economia Politica (Springer);
- Risk and Decision Analysis (IOS Press) - **3 times**;
- Environmental Science & Technology (ACSPublications);
- Statistica Applicata - Italian Journal of Applied Statistics;
- Sports Medicine (Springer);
- Humanities and Social Sciences Communications (Springer Nature, IF 2021: 3.5);
- Forecasting (MPDI, IF 2022: 3.0).
- Applied Sciences (MDPI, IF 2023: 2.5)
- Open Computer Science (De Gruyter, IF 2023: 1.1)

## REVIEWER FOR CONFERENCE PROCEEDINGS AND POST CONFERENCE PROCEEDINGS:

---

- IES 2025 (Innovation & Society: Statistics and Data Science for Evaluation and Quality) - University of Padova (Bressanone-Brixen, Italy, June 25-27, 2025)
- LOD 2022 (8th International Online & Onsite Conference on Machine Learning, Optimization, and Data Science)
- ICRA9 (9th International Conference on Risk Analysis)
- EAI Intetain 2023 (14th EAI International Conference on Intelligent Technologies for Interactive Entertainment) - **6 papers**

## EXTERNAL REFEREE FOR PHD THESIS:

---

- "Privacy-preserving Data Analysis of Location Data for the Design of Human Mobility Services and Infrastructures", Dr. Arianna Burzacchi, Politecnico di Milano (Supervisor: Prof. Simone Vantini)
- "Essays on the Growth and Productivity of Italian Firms throughout the Crisis", Dr. Francesco Biancalani, IMT School for Advances Studies Lucca (Supervisor: Prof. Massimo Riccaboni)
- "slr-kit: a semi-supervised machine learning framework for systematic literature reviews", Dr. Davide Giuffrida, PhD school in Electronics, Computer Science and Electrical Engineering of the University of Pavia (Supervisor: Prof. Tullio Facchinetti)

## MASTER THESIS AS SUPERVISOR OR CO-SUPERVISOR:

---

1. Simone Matera, "Dai Dati agli Expected Goals: Valutazione e confronto di Modelli Statistici e di Machine Learning tramite Accuracy ed Explainability" (A.A. 2023/24), Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, Corso di Laurea Magistrale in Ingegneria Informatica (University of Bergamo). Supervisor: Rodolfo Metulini.
2. Andrea Vaerini, "Expected Goals Model: Applicazione del modello logistico per la stima della probabilità di segnare nella Lega Serie A di Calcio" (A.A. 2023/24), Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, Corso di Laurea Triennale in Ingegneria Informatica (University of Bergamo). Supervisor: Rodolfo Metulini.
3. Daniele Beretta, "Statistics and Sport: a new methodology for sport practice classification" (A.A. 2023/24), Dipartimento di Scienze Economiche, Corso di Laurea Magistrale in Economics and Data Analysis (University of Bergamo). Supervisor: Annamaria Bianchi, Co-Supervisor: Rodolfo Metulini.
4. Andrea Tresoldi, "Applicazione di Reti Neurali Ricorrenti per il Rilevamento di Anomalie in Dati Smartphone di Mobilità della Popolazione" (A.A. 2022/23), Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, Corso di Laurea Magistrale in Ingegneria Informatica (University of Bergamo). Supervisor: Francesco Finazzi, Co-Supervisor: Rodolfo Metulini.
5. Mariagerarda Di Martino, "L'impatto del COVID-19 sulle PMI italiane" (A.A. 2020/21), Department of Economics and Statistics (DISES), University of Salerno.

6. Angelo Turco, "Livello di istruzione e brain-drain: un'analisi esplorativa tramite modello gravitazionale" (A.A. 2020/21), Dipartimento di Scienze Aziendali - Management e Innovation Systems (DISA-MIS), University of Salerno.
7. Valerio Panzariello, "La crisi dei mutui sub-prime: cause e risvolti nell'economia reale" (A.A. 2020/21), Dipartimento di Scienze Aziendali - Management e Innovation Systems (DISA-MIS), University of Salerno.
8. Dario Cerra, "Una analisi statistica sulle dinamiche economiche del gioco del calcio durante la pandemia da COVID-19" (A.A. 2020/21), Dipartimento di Scienze Aziendali - Management e Innovation Systems (DISA-MIS), University of Salerno.
9. Donato Bovi, "La digitalizzazione delle PMI italiane: un'analisi statistica esplorativa" (A.A. 2020/21), Dipartimento di Scienze Aziendali - Management e Innovation Systems (DISA-MIS), University of Salerno.
10. Marco Crescenzo, "Università e produttività d'impresa: Un'analisi statistica su dati georeferenziati per la valutazione dello spillover geografico" (A.A. 2019/20), Department of Economics and Statistics (DISES), University of Salerno.

## TERZA MISSIONE:

---

- Progetto di Terza Missione "Salerno Letteratura Festival" Valutazione dell'impatto del Festival sugli indicatori socio-economici del territorio (coordinatore: Prof. Luigi Aldieri)

## ATTENDED COURSES & SUMMER SCHOOLS:

---

|          |  |
|----------|--|
| JAN 2019 | <b>Model Based Clustering</b><br>University Carlo Cattaneo LIUC, Castellanza, Varese (Italy)<br>Instructor: Prof. Cristina Tortora   |
| NOV 2017 | <b>Introduction to Functional Data Analysis</b><br>University of Bergamo - Bergamo (Italy)<br>Instructor: Prof. Laura Sangalli   |
| SEP 2012 | <b>Topics in Microeconometrics with applications to Energy Environmental economics</b><br>Centro Interuniversitario di Econometria (CidE) - Palermo (Italy)<br>Director: Prof. Matteo Manera |
| JUL 2012 | <b>Fiscal federalism, mobility and policy evaluation</b><br>European Regional Science Association (ERSA) Summer school - Umea (Sweden)<br>Director: Prof. Johan Lundberg                     |
| MAY 2011 | <b>Advanced course in Spatial Econometrics</b><br>Spatial Econometrics Advanced Institute (SEAI) - Roma (Italy)<br>Director: Prof. Giuseppe Arbia  |

## PAST COMMITMENTS OUTSIDE OF THE ACADEMIA:

---

- APR 2009 - | Biostatistician - Quality System Assurance assistant at MEDIDATA S.R.L., CLINICAL  
DEC 2009 | RESEARCH OPERATOR (CRO), Modena  
Producing reports for clinical and observational trials. I participated in the project of an information systems
- JUL 2008 - | Junior Economist at PROMETEIA S.P.A., Bologna  
JAN 2009 |  
Forecasting of financial variables to a regional disaggregated level with STATA and DEMETRA.
- MAR 2008 - | Analyst at RES.COOP S.R.L., Bologna  
JUN 2008 |  
Analyzing the structure of the mechanical sector firms in relation to their outsourcing production phase.

I consent to the publication of my CV in compliance with legal requirements for transparency (articoli 46 e 47 del D.P.R. 445/2000)

Rodolfo Metulini,  
01/09/2025