

# Andrea Gilardi | Curriculum Vitae

– Milan, Italy

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## Summary

I am a tenure-track assistant professor (RTT) in Statistics (S.S.D. STAT-01/A) at the [Department of Economics, Management and Statistics](#) of [University of Milano - Bicocca](#). My research focuses on the analysis of spatial and spatio-temporal data, with a particular interest on linear networks and environmental problems.

## Current Position

**University of Milano - Bicocca**  
*Tenure Track Assistant Professor (RTT)*

**Milan (IT)**  
*FEB. 25 - Today*

## Education

**University of Milano - Bicocca**  
*PhD in Statistics and Mathematical Finance*

*NOV.17–APR.21*

**University of Milano - Bicocca**  
*Master Degree in Statistics (LM-82)*  
Final mark: 110/110 e lode (Magna cum laude)

*SET.15–OTT.17*

**Università of Milano - Bicocca**  
*Bachelor Degree in Statistics (L-41)*  
Final mark: 110/110 e lode (Magna cum laude)

*SET.12–SET.15*

## Teaching

### Lecturer (Docente).....

- *Sampling Methods*, University of Milano - Bicocca, Master Degree in Statistics and Economics, 42 hours, a.y. 2025-2026.
- *Statistics I*, University of Milano - Bicocca, Bachelor degree in Marketing, Comunicazione Aziendale e Mercati Globali, 40 hours, a.y. 2024-2025. [Details](#).
- *Lab - Data Science for Industrial Engineering*, Politecnico di Milano, Master degree in Mechanical Engineering, 45 hours, a.y. 2024-2025, Co-Lecturer. [Details](#).
- *Statistical Learning for Healthcare Data*, Politecnico di Milano, Master degree in Mathematical Engineering, 30 hours, a.y. 2024-2025. [Details](#).
- *Basics of Statistics and Biomedical Signals*, Politecnico di Milano, Bachelor degree in Biomedical Engineering, 30 hours, a.y. 2023-2024. [Details](#).
- *R for Data Science*, University of Milano - Bicocca, PhD in Economics, Management and Statistics, Curriculum Statistics, 12 hours per year, aa.yy. 2022-2023; 2023-2024. [Materials](#).
- *Livellamento al Software R* (Introduction to the R Software), University of Milano - Bicocca, Master degree in Statistics and Economics, 14 hours per year, aa.yy. 2022-2023; 2023-2024; 2024-2025.

### Teaching Assistant (Esercitatore).....

- *Basics of Statistics and Biomedical Signals*, Politecnico di Milano, Bachelor degree in Biomedical Engineering, 15 hours, a.y. 2023-2024. [Details](#).
- *Statistica II*, University of Milano - Bicocca, Bachelor degree in Statistical and Economic Sciences, 20 hours per year, aa.yy. 2017-2018; from a.y. 2022-2023 to 2025-2026.

### Tutor.....

- *Statistica II*, University of Milano - Bicocca, Bachelor degree in Statistical and Economic Sciences, 40 hours per year, aa. yy. 2018-2019; 2019-2020; 2020-2021; 2021-2022.

- [Lab Data Challenges](#), University of Milano - Bicocca, Master degree in Statistics and Economics, 20 hours, a.y. 2020-2021.
- *R for Road Safety*, RAC Foundation, 12 hours, Oct. 2019, [Program](#) and [Materials](#).
- *Introduction to R*, University of Milano - Bicocca, Bbetween 2019 MULTIMEDIA, 20 hours, a.y. 2018-2019, [Materials](#).
- *Introduction to tidyverse and plumber*, University of Turin - Master in Data Science, 4 hours, Oct. 2018.
- *Statistica Economica M* (Economic Statistics), University of Milano - Bicocca, Master degree in Statistics and Economics, 20 hours, a.y. 2017-2018.
- *Informatica* (Informatics), University of Milano - Bicocca, Bachelor degree in Statistical and Economic Sciences, 20 hours, a.y. 2016-2017.

## Working Experience

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### Politecnico di Milano

*Assistant Professor (RTDA)*

**Milan (IT)**

*JUN. 23 - FEB. 25*

I worked on a project named [GRINS: Growing Resilient, INclusive and Sustainable](#) which is part of the Next Generation EU program (National Recovery and Resilience Plan).

### POLIMI Graduate School of Management

*Instructor*

**Milan (IT)**

*NOV. 23 - DEC.23*

I held a 16 hours course entitled "Analytics - Tools di Analisi" for approximately 30 employees of [ACEA](#). We focused on descriptive and exploratory statistics, supervised and unsupervised clustering techniques, and principal components analysis with practical examples in JASP.

### University of Milano - Bicocca

*Research fellow (Assegnista di Ricerca)*

**Milan (IT)**

*JAN. 21 - JUN. 23*

I worked on a project entitled "Spatio-temporal models for spatial network data" under the supervision of Prof. [Riccardo Borgoni](#).

### Catholic University of the Sacred Heart

*Tutor*

**Milan (IT)**

*OCT.20-NOV.20*

I worked on a project named *Black Box and Big Data per la stima e la previsione dei sinistri* under the supervision of Prof. [Diego Zappa](#).

### University of Milano - Bicocca

*Tutor*

**Milan (IT)**

*JUN.20-OCT.20 & JUN.21 - OCT.21 & JUN.22 - OCT.22 & JUN.23-OCT.23*

I prepared and organized the admission tests for the master degree in Statistics and Economics, Department of Economics, Management and Statistics.

### GR & Partner S.A.S

*Consultant*

**Milan (IT)**

*APR.18-OCT.18*

I developed a User Interface using R and Shiny.

## PhD Thesis

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**Title:** *Statistical Models and Data Structures for Spatial Data on Road Networks*

**Supervisor:** Prof. Riccardo Borgoni and Prof. Jorge Mateu

**Summary:** The thesis introduces data structures, vital pre-processing steps, and statistical models to analyse spatial data lying on road networks using point-pattern and network-lattice approaches.

## Master Degree Thesis

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**Title:** *Previsione spaziotemporale per gli interventi in emergenza delle ambulanze nel comune di Milano*

**Supervisor:** Prof. Riccardo Borgoni

**Summary:** We developed a spatiotemporal model to predict the distribution of the emergency medical interventions in Milan.

## Visiting Periods

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- I spent seven months in Castellón de la Plana (ES), from February 2020 to June 2020 and May 2021 to July 2021, working with Prof. [Jorge Mateu](#) on statistical models for events on road networks.
- I stayed in Leeds (UK) for three months, from September 2019 to November 2019, working with Prof. [Robin Lovelace](#) on R packages and classes for road networks. [Final presentation](#).

## Publications

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1. Borgoni, R., **Gilardi, A.**, Michelangeli, A., Tkach, K. (2025). An Inverted-U, an Elephant or Neither? Exploring the Link Between Migrant Integration Policies and Pro-Immigrant Sentiment. *POPULATION SPACE & PLACE*. (2025) <https://dx.doi.org/10.1002/psp.70053>
2. D'Angelo, N., Albano, A., **Gilardi, A.** et al. Non-separable spatio-temporal Poisson point process models for fire occurrences. *Environ. Ecol. Stat.* (2025) <https://doi.org/10.1007/s10651-025-00645-x>
3. **Gilardi, A.**, Ieva, F., Statistical methods for evaluating the environmental sustainability. (2024) Book of short papers SIS (2024). Methodological and Applied Statistics and Demography IV. Springer. Electronic ISSN: 3059-2143. Print ISBN: 978-3-031-64446-7 [https://doi.org/10.1007/978-3-031-64447-4\\_18](https://doi.org/10.1007/978-3-031-64447-4_18);
4. D'Angelo, N., Albano, A., **Gilardi, A.**, Adelfio, G., Spatio-temporal modelling of fires in Sicily. (2024) Book of short papers SIS 2024. Springer. Electronic ISSN: 3059-2143. <https://doi.org/10.1007/s10651-025-00645-x>;
5. **Gilardi, A.**, Borgoni, R., Mateu, J., A non-separable first-order spatio-temporal intensity for events on linear networks: an application to ambulance interventions. (2024) *Annals of Applied Statistics* Volume 18, No. 1, 529-554. <http://dx.doi.org/10.1214/23-AOAS1800>.
6. **Gilardi, A.**, Borgoni, R., The impact of traffic flow and road signs on road accidents: an approach based on spatiotemporal point pattern analysis on linear networks. In: Book of the Short Papers - SIS 2023 (pp. 702-707), Pearson, ISBN: 9788891935618AAVV, Ancona (IT). [Link](#);
7. **Gilardi, A.**, Borgoni, R., Presicce, L., Mateu, J. (2023) Measurement Error Models for Spatial Network Lattice Data: Analysis of car crashes in Leeds. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* Volume 186, Issue 3, July 2023, Pages 313–334, <https://doi.org/10.1093/jrsssa/qnad057>;
8. **Gilardi, A.**, Borgoni, R., Mateu, J. (2022). Geographically weighted regression for spatial network data: an application to traffic volumes estimation. In 51th Scientific Meeting of the Italian Statistical Society (pp. 1504 - 1509). Torino:Pearson Italia. ISBN: 9788891932310, Caserta (IT). [Link](#).
9. **Gilardi, A.**, Borgoni, R., Mateu, J. (2022). Spatial statistical calibration on linear networks: an application to the analysis of traffic volumes. In Proceedings of the 10th International Workshop on Spatio-Temporal Modelling, Lleida (Spain), 1-3 June 2022. ISBN 978-84-9144-364-3. [http://doi.org/10.21001/METMA\\_X](http://doi.org/10.21001/METMA_X).
10. Borgoni, R., **Gilardi, A.**, Zappa, D. (2022). Optimal Subgrids from Spatial Monitoring Networks. In: (a cura di): Lombardo R; Camminatiello I; Simonacci V, IES 2022 Innovation & Society 5.0: Statistical and Economic Methodologies for Quality Assessment - Book of Short Papers. p. 148-152, Sesto San Giovanni:Professional Knowledge Empowerment, ISBN: 978-88-94593-35-8, Capua, 2022. [Link](#).
11. **Gilardi, A.**, Mateu, J., Borgoni, R., Lovelace, R. (2022) Multivariate hierarchical analysis of car crashes data considering a spatial network lattice. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* Volume 185, Issue 3, July 2022, Pages 1150–1177, <http://doi.org/10.1111/rssa.12823>;
12. **Gilardi, A.**, Borgoni, R., Presicce, L., Mateu, J. (2021) Measurement error models on spatial network lattices: car crashes in Leeds. In 13th Scientific Meeting of the Classification and Data Analysis Group, Firenze, September 9-11, 2021. <https://doi.org/10.36253/978-88-5518-340-6>;
13. **Gilardi, A.**, Borgoni, R., Mateu, J. (2021). A spatio-temporal model for events on road networks: an application to ambulance interventions in Milan. In 50th Scientific Meeting of the Italian Statistical Society (pp. 702 - 707). Torino:Pearson Italia. ISBN: 9788891927361, Pisa - Virtual. [Link](#);
14. Borgoni, R., **Gilardi, A.**, Zappa, D. (2020). Assessing the Risk of Car Crashes in Road Networks. *Social Indicators Research*, 1-19. <https://doi.org/10.1007/s11205-020-02295-x>;
15. Borgoni, R., **Gilardi, A.**, Zappa, D. (2020). Spatial modelling of driver crash risk using georeferenced data. In NESPUTT 2019 - New Economic & Statistical Perspectives on Urban & Territorial Themes. (NESPUTT 2019). E-book. vol. libreriauniversitaria, ISBN: 9788833592091, University of Milan - Bicocca, 2019. [Link](#);
16. **Gilardi, A.**, Borgoni, R., Zappa, D. (2020). Assessing the Risk of Car Accidents in Road Networks. In NESPUTT 2019 - New Economic & Statistical Perspectives on Urban & Territorial Themes. (NESPUTT 2019). E-book.

- vol. *libreriauniversitaria*, ISBN: 9788833592091, University of Milan - Bicocca, 2019. [Link](#);
17. **Gilardi, A.**, Borgoni, R., Zappa, D. (2019). Spatial Logistic Regression for Events Lying on a Network: Car Crashes in Milan. In: Book of Short Papers SIS2019. (pp. 1165-1170), Pearson, ISBN: 9788891915108, Milano, 2019. [Link](#);
  18. **Gilardi, A.**, Borgoni, R., Pagliosa, A., Bonora, R. (2018). Spatiotemporal Prevision for Emergency Medical System Events in Milan. In: Book of short Papers SIS 2018 (pp. 1697-1702). ISBN: 9788891910233, Palermo, Italia, 2018. [Link](#).

## Summer Schools and Workshops

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- *2nd Meeting on Territorial Sustainability, Spoke 7 (GRINS)*, University of Bari (IT), February 13-14, 2025
- *GRINS Workshop: Geostatistical harmonisation of large environmental and climate datasets for the AMELIA platform: inter-spoke coordination and first results*, University of Bergamo (IT), March 22nd, 2024.
- *R Project Sprint 2023*, University of Warwick (UK), August 30 - September 1, 2023. [Webpage](#).
- *Contributing to R*, Online workshop held during useR! 2021.
- *Spatial Statistics for huge datasets and best practices*, Online workshop held during useR! 2021.
- *Tidyverse developer day*, Tolouse (FR), July 2019. [Announcement](#).
- *Robust Statistics : Foundations and Recent Developments*, University of Milano - Bicocca (IT), March 2019.
- *CLADAG, Summer School on Clustering and Classification*, University of Catania (IT), May 2018.

## Conferences

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### Invited.....

- *65th ISI World Statistics Congress 2025*, The Hague (NL)
- *Workshop on Nonparametric Statistics*, May 15-16 2025, Luiss University, Rome (IT)
- *Stat Data Camp*, September 23-27 2024 - University of Padova (IT). This was a workshop organised by the University of Padova in Bressanone (IT) where I presented my work on the R package *sfnetworks*.
- *Statalk*, May 30-31 2024, Department of Statistics, Computer Science, Applications G. Parenti, University of Florence (IT)
- *2023 IMS International Conference on Statistics and Data Science (ICSIDS)*, December 18-21, 2023, Lisbon (PT)
- *15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)*, December 17-19 2022, King's College London, London (UK).
- *Summer Institute in Computational Social Science (SICSS-Covenant)*, June 22-29 2022, Covenant University, Ogun State (NG).
- *OpenGeoHub Summer School 2021*, September 1-3 2021. Online Event.

### Contributed.....

- *Spatial Statistics 2025: At the Dawn of AI*, July 15-18 2025, Noordwijk (NH)
- *16th Workshop on Spatial Statistics and Image Analysis in Biology*, June 2-5 2025, Smogen (SE)
- *METMA XI, 11th International Workshop on Spatio-Temporal Modelling*, July 23-25 2024, Lancaster (UK)
- *useR! 2024 Meeting*, July 8-11, Salzburg (AU)
- *52th meeting of the Italian Statistical Society*, June 17-20 2024, Bari (IT)
- *Free and Open Source Software for Geospatial (FOSS4G)*, August 22-28 2022, Florence (IT).
- *51th meeting of the Italian Statistical Society*, June 22-24 2022, Caserta (IT).
- *METMA X, 10th International Workshop on Spatio-Temporal Modelling*, June 1-3 2022, Lleida (ES)
- *CLADAG 2021, 13th Scientific Meeting Classification and Data Analysis Group*, September 9-11 2021, Online
- *UseR! 2021 Meeting*, July 5-9 2021, Online
- *50th meeting of the Italian Statistical Society*, 21-25 June 2021, Online.
- *OpenGeoHub 2020*, August 16-23 2020, Wageningen (NH).

- *Nesputt 2019: New Economic & Statistical Perspective*, November 21-22 2019, Milan (IT).
- *Meeting of the Italian Statistical Society*, June 18-21 2019, Milan (IT).
- *49th Meeting of the Italian Statistical Society*, June 20-22 2018, Palermo (IT).

## Attended.....

- *2024 IMS International Conference on Statistics and Data Science (ICSIDS)*, December 16-19 2024, Nice (FR)
- *Stataalk*, September 15th 2023, Università di Roma - Sapienza (IT).
- *GRASPA 2023*, July 10-11 2023, Palermo (IT).
- *Workshop of Young Environmental Statistician (YES)*, February 3rd, 2023, University of Bologna (IT).
- *e-Rum 2020: European R User Meeting*, June 17-20 2020, Online event.
- *UseR! 2019 Meeting*, July 9-12 2019, Toulouse (FR).
- *Stataalk*, March 29th, 2019, University of Bologna (IT).
- *Stataalk*, November 17th, 2017, University of Padova (IT).

## Organized Conferences

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- I was a member of the Organizing Committee for the [SDS 2025 Conference](#).
- I organised session for the CFE-CMStatistics 2024 conference which was held at King's College London (UK) from December, 14th to December, 16th 2024.
- I was a member of the Organizing Committee of the [Mathematics for planet Earth \(M4E\)](#) Workshop. This workshop was held on November 11-12, 2024 at Politecnico di Milano (IT)
- I organized an online Webinar and Hackathon related to the R package [sfnetworks](#) as official satellite event of the e-Rum 2020 Conference. [Materials](#), [slides](#) and [recordings](#).
- I was a member of the Local Organizing Committee of [Nesputt 2019: New Economic & Statistical Perspective](#) conference, Milan (IT).

## Grants

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- [Tidy Spatial Networks in R](#) funded by the [R Consortium](#). 9000\$. Joint project with [Lucas van der Meer](#), [Lorena Abad](#), and [Robin Lovelace](#).

## Awards

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- [IMS New Researcher Travel Award](#) to attend the ICSIDS 2024 Conference (750 USD)
- Travel award to attend the [R Project Sprint 2023](#) event. 650£.
- Scholarship for the OpenGeoHub 2020 - Summer School. Project: *plotKML functionality to support sf and stars objects*. 800€. [Final presentation](#).
- [SIS](#) award for the best poster at the SIS-2019 conference.
- [Young-SIS](#) award for the best poster at the SIS-2018 conference.

## Community activities

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### Referee service

AStA Advances in Statistical Analysis (2); Journal of Transport Geography (1); PLOS ONE (2) Scientific Reports (3); Spatial Statistics (4); Statistical Methods & Applications (1); Stochastic Environmental Research and Risk Assessment (1); Technometrics (1).

### Affiliations

Institute of Mathematical Statistics (IMS); International Statistical Institute (ISI); rOpenSci; Società Italiana di Statistica (SIS); Sezione Giovani della Società Italiana di Statistica (Y-SIS).

### Projects and activities with public engagement

- Member of the group working on Progetto di Terza Missione entitled *Analisi della dislocazione spaziale e spaziotemporale degli interventi extraospedalieri e definizione di criteri per monitorare e dimensionare la flotta dei mezzi di soccorso*, University of Milano - Bicocca, 2023.
- *Corso di Formazione Tavolo territoriale / Elementi di geo-statistica e microsimulazione spaziale*. This is a workshop organised by [PoliS](#) and [Istat](#) that was held online and in presence at the end of June 2024. I presented a 90 minutes talk which was entitled *Incidentalità stradale in Lombardia*.

## Software

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I am a proficient R user, with a particular interest in the `r-spatial` world and tidyverse environment. I am the author of two R packages, namely [osmextract](#) ([reviewed](#) by rOpenSci foundation and now on [CRAN](#)) and [sfnetworks](#) (also on [CRAN](#)). The first package focuses on the management and downloading of Open Street Map data extracts obtained from several providers (like [Geofabrik](#)), while the second package provides a tidy approach to spatial network analysis.

I contributed to several R packages like `ggplot2`, `recipes`, `sf`, `stplanr`, `dodgr`, and `osmdata`. I attended the [Tidyverse Developer Day](#) in Tolouse during the UseR! 2019 conference and I attended the [R Project Sprint 2023](#) event at the University of Warwick (UK).

I can write scientific documents and presentations using  $\text{\LaTeX}$  and I have a basic knowledge of Rust, GDAL, POSTGIS, JASP, SAS, Python, and STATA.

## Badges

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**SAS:** [SAS Certified Base Programmer for SAS 9](#)

**SAS:** [SAS Certified Predictive Modeler Using SAS Enterprise Miner 7](#)

## Additional Information

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**Associazioni:** Volunteer at Volontari del Soccorso di Calolziocorte from July 2016.

## Notes

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Autorizzo la pubblicazione ai sensi del D.Lgs. n. 33/2013 "Riordino della disciplina riguardante gli obblighi di pubblicità, trasparenza e diffusione di informazioni da parte delle pubbliche amministrazioni" e acconsento all'utilizzo delle informazioni ivi contenute ai sensi del D.L. n. 196/2003 "Codice in materia di protezione dei dati personali".

Le dichiarazioni rese nel presente curriculum sono da ritenersi rilasciate ai sensi degli artt. 46 e 47 del D.P.R. 445/2000.