Andrea Gilardi | Curriculum Vitae

– Milan, Italy

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Summary

I am a research fellow in Statistics at the University of Milano - Bicocca, Department of Economics, Management and Statistics (DEMS). My main research interests are spatial and spatiotemporal models on linear networks.

Current Position

University of Milano - Bicocca   **Milan, Italy**
Research fellow   *JAN. 21 - Today*
I work on a project entitled "Spatio-temporal models for spatial network data".

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)   *SET.15–OTT.17*
Final mark: 110/110 e lode (Magna cum laude)

Università of Milano - Bicocca
Bachelor Degree in Statistics (L-41)   *SET.12–SET.15*
Final mark: 110/110 e lode (Magna cum laude)

Teaching

- Tutor for the course of Statistica II (Statistics 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.
- Tutor for the course entitled *Lab Data Challenges*, University of Milano - Bicocca, Master degree in Statistics and Economics, 20 hours, a.y. 2020-2021.
- Tutor for the course entitled *R for Road Safety*, RAC Foundation, 12 hours, Oct. 2019, Program and Materials.
- Tutor for the course entitled *Introduction to R*, University of Milano - Bicocca, Bbetween 2019 MULTIMEDIA, 20 hours, a.y. 2018-2019, Materials.
- Tutor for the course entitled *Introduction to tidyverse and plumber*, University of Turin - Master in Data Science, 4 hours, Oct. 2018.
- Tutor for the course of *Statistica Economica M* (Economic Statistics), University of Milano - Bicocca, Master degree in Statistics and Economics, 20 hours, a.y. 2017-2018.
- Teaching Assistant (Esercitatore) for the course of *Statistica II* (Statistics II), University of Milano - Bicocca, Bachelor degree in Statistical and Economic Sciences, 40 hours, a.y. 2017-2018.
- Tutor for the course of *Informatica* (Informatics), University of Milano - Bicocca, Bachelor degree in Statistical and Economic Sciences, 20 hours, a.y. 2016-2017.

Working Experience

Catholic University of the Sacred Heart   **Milan (Italy)**
Tutor   *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   **Milan (Italy)**
Tutor   *JUN.20–OCT.20 & JUN.21 – OCT.21*
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   **Milan (Italy)**
Consultant   *APR.18–OCT.18*
I developed a User Interface using R and Shiny.

PhD Thesis

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

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

- 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

1. **Gilardi, A.**, Borgoni, R., Presicce, L., Mateu, J., Measurement Error Models for Spatial Network Lattice Data: Analysis of Car Crashes in Leeds. Under review. Preprint;
2. **Gilardi, A.**, Borgoni, R., Mateu, J., A non-separable first-order spatio-temporal intensity for events on linear networks: an application to ambulance interventions. Under review. Preprint;
3. **Gilardi, A.**, Lovelace, R., Padgham, M., Data structures and methods for reproducible street network analysis: overview and implementations in R. Under review. Preprint;
4. Borgoni, R., **Gilardi, A.**, Zappa, D. (2022) Optimal Subgrids from Spatial Monitoring Networks, In Proceedings of the 10th International Conference IES 2022. Link.
5. **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)*. `http://doi.org/10.1111/rssa.12823`;
6. **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`;
7. **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). Pearson Italia. Link;
8. 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`;
9. 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. Link;
10. **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. Link;

11. **Gilardi, A.**, Borgoni, R., Zappa, D. (2019). Spatial Logistic Regression for Events Lying on a Network: Car Crashes in Milan. In Smart Statistics for smart applications (pp. 1165-1170). Pearson Italia. Link;
12. **Gilardi, A.**, Borgoni, R., Pagliosa, A., Bonora, R. (2018). Spatiotemporal Prevision for Emergency Medical System Events in Milan. In 49th Scientific Meeting of the Italian Statistical Society (pp. 1697-1702). Person Italia. Link.

Summer Schools and Workshops

- Contributing to R, Online workshop held during useR! 2021. Recordings.
- Spatial Statistics for huge datasets and best practices, Online workshop held during useR! 2021. Recordings.
- Tidyverse developer day, Tolouse (FR), July 2019. Announcement.
- Robust Statistics : Foundations and Recent Developments, University of Milano-Bicocca, March 2019.
- CLADAG, Summer School on Clustering and Classification, University of Catania - May 2018.

Conferences

Invited

- 15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2022) - King's College London.
- Summer Institute in Computational Social Science (SICSS-Covenant), 22-29 June 2022, Covenant University, Ogun State, Nigeria.
- OpenGeoHub Summer School 2021, 1-3 September 2021, Online Event.

Contributed

- Free and Open Source Software for Geospatial (FOSS4G), 22-28 August 2022, Florence (Italy).
- 51th meeting of the Italian Statistical Society, 22-24 June 2022, Caserta (Italy).
- METMA X, 10th International Workshop on Spatio-Temporal Modelling, 1-3 June 2022, Lleid (Spain)
- CLADAG 2021, 13th Scientific Meeting Classification and Data Analysis Group, 9-11 September 2021, Online.
- UseR! 2021 Meeting, 5-9 July 2021, Online.
- 50th meeting of the Italian Statistical Society, 21-25 June 2021, Online.
- OpenGeoHub 2020, 16-23 August 2020, Wageningen (Netherlands).
- Nesputt 2019: New Economic & Statistical Perspective, 21-22 November 2019, Milan (Italy).
- Meeting of the Italian Statistical Society, 18-21 June 2019, Milan (Italy).
- 49th Meeting of the Italian Statistical Society, 20-22 June 2018, Palermo (Italy).

Attended

- e-Rum 2020: European R User Meeting, 17-20 June 2020, Online event.
- UseR! 2019 Meeting, 9-12 July 2019, Tolouse (France).
- Statalk, March 29th, 2019, University of Bologna (Italy).
- Statalk, November 17th, 2017, University of Padova (Italy).

Organized Conferences

- 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 (Italy).

Grants

- Tidy Spatial Networks in R funded by the R Consortium. 9000$

Awards

- Scolarship for the OpenGeoHub 2020 - Summer School. Project: *plotKML functionality to support sf and stars objects*. 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

Referee service

AStA Advances in Statistical Analysis; Spatial Statistics; rOpenSci.

Affiliations

Società Italiana di Statistica (SIS); rOpenSci.

Software

I am a proficient R user, with a particular interest in the `r-spatial` world and the 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). I contributed to several R packages like `ggplot2`, `recipes`, `sf`, `stplanr` and `osmdata`. I attended the *Tidyverse Developer Day* in Tolouse during the UseR! 2019 conference.

I can write scientific documents and presentations using LaTeX and I have a basic knowledge of SQLite, GDAL, POSTGIS, SAS, Python, and STATA.

Badges

SAS: SAS Certified Base Programmer for SAS 9

SAS: SAS Certified Predictive Modeler Using SAS Enterprise Miner 7

Additional Information

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

Notes

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali".