

Sara Geremia

Curriculum Vitae

[Applied Data Science & Artificial Intelligence](#) -

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Education

2022/12/31 - current: **Ph.D.** in Applied Data Science & Artificial Intelligence, University of Trieste - IT; Curriculum in Economy and Society; Topic: Network Analysis Methods to evaluate industrial performance, supervisor: Prof. D. De Stefano.

2025/01/11 - 2025/07/25: **Research visit**, University College Dublin, Ireland - School of Mathematics and Statistics; topic: Community detection methods for research collaboration networks, supervisor: Dr. M. Fop;

2021/10/29: **M.Sc.** (*Magna cum Laude*) in Statistical Sciences - Curriculum Data Science (LM-82), Alma Mater Studiorum University of Bologna; title of the thesis: Automatic assessment of English proficiency levels via language complexity metrics, advisor: Prof. L. Anderlucci.

2021/03/01 - 2021/09/10: **Dissertation Internship Abroad**, National University of Ireland, Galway - School of Mathematics, Statistics and Applied Mathematics; topic: A Supervised Learning Model for the Automatic Assessment of Language Levels in learner English, supervisor: Dr. A. Simpkin;

2019/07/11: **B.Sc.** (*Magna cum Laude*) in Statistical Sciences - Curriculum Biodemography (L-41), Alma Mater Studiorum University of Bologna; title of the thesis: Uno studio case-crossover sull'associazione tra inquinamento atmosferico da particolato e visite al pronto soccorso pediatrico di Padova per bronchiolite (*A case-crossover study on the association between particulate air pollution and visits to the Pediatric Emergency Department of Padua for bronchiolitis*), advisor: Prof. R. Miglio.

Working Activity

2023/03/15 - current: **Research support activities**, Department of Law - University of Genoa; ERC Project "HABITAT: How European Big Cities and Legal Systems Trigger Urban Inequality";

2023/10/15 - 2023/12/31: **Tutoring university students**, Department of Political and Social Sciences - University of Trieste;

2022/02/23 - 2022/12/31: **Data cleaning, statistical analyses and reports production**, Centro collaboratore dell'OMS dell'IRCCS materno infantile "Burlo Garofolo": *Carrying out the project: 5 per mille, anno 2014 "Lo stato di salute delle donne e dei bambini in Friuli Venezia Giulia e la valutazione dei suoi determinanti"*;

2021/03/01 - 2021/08/31: **Statistical analyses and static and dynamic reports production**, National University of Ireland, Galway - School of Mathematics, Statistics and Applied Mathematics: *Taking part as a trainee in a research project aimed at the automatic assessment of language levels in learner English*;

2019/01/14 - 2019/02/15: **Data cleaning and statistical analyses**, University of Padova - Unit of Biostatistic, Epidemiology and Public Health: *Taking part as a trainee in a research project aimed at assessing the effect of particulate pollution on the occurrence of respiratory diseases in children*.

Conferences

2025/07/22: **ARS 2025**, Organised Session: *Statistical approaches for clustering and community detection in complex networks*

2025/07/22: **CLADAG 2025**, Contributed Talk: *Density-based community detection combining structure and attribute information*

2025/07/22: **WGMBC 2025**, Poster Session: *Community-level core-periphery structures in research networks*

2025/06/23: **Sunbelt 2025**, Contributed Talk: *Uncovering core and periphery structures in scientific collaboration through a community-based analysis of Italian academic scholars*

2025/06/16: **SIS 2025**, Invited Talk: *Investigating the Lisbon Treaty's impact on the co-citation network of the Court of Justice of the European Union case law*

2025/05/12: **CASI 2025**, Contributed Talk: *Uncovering core-periphery structures in EU-funded research collaboration networks*

2024/12/09: **CNA 2024**, Contributed Talk: *How attribute information guides community detection in leader-based social networks*

2024/07/22: **WGMBC 2024**, Poster Session: *What is the impact of content similarity on density-based community detection in attributed networks*.

2024/06/24: **Sunbelt 2024**, Contributed Talk: *Analyzing scientific collaboration hypergraphs: a weighted approach to community detection*;

2023/12/16: **CFE 2023**, Collaborator to the abstract: *Investigating the impact of content similarity on density-based clustering of social networks*;

2023/09/12: **CLADAG 2023 Scientific Meeting**, Contributed Talk: *Visualization of proximity and role-based embeddings in a regional labour flow network*;

2019/08/21: **ISES ISIAQ 2019 Joint Annual Meeting**, Collaborator to the abstract: *Air pollution particulate matter is associated with Pediatric Emergency Room admissions for bronchiolitis*;

2019/10/19: **YMS 2019 Young Statisticians' Meeting**, Contributed Talk: *Increasing Risk Of Emergency Room Admission For Bronchiolitis In Infants Exposed To Air Pollution*.

Publications

S. Geremia, T. Gaillat, N. Ballier, A.J. Simpkin. **Exploring the cross-lingual influence of linguistic complexity in second language writing assessment**. *Assessing Writing* (May 2025);

S. Geremia, E.P. Valente, I. Mariani, P. Dalena, M. Lazzerini. **Women's suggestions on how to improve the quality of maternal and newborn care during the COVID-19 pandemic in Italy: A co-occurrence network analysis**. *J Glob Health* (May 2023);

R. Costa et al. **Quality of maternal and newborn care around the time of childbirth for migrant versus nonmigrant women during the COVID-19 pandemic: Results of the IMAGiNE EURO study in 11 countries of the WHO European region**. *International Journal of Gynecology & Obstetrics* (December 2022);

E. Gallo, S. Bressan, S. Baraldo, D. Bottigliengo, S. Geremia, A.S. Acar, L. Zagolin, G. Marson, L. Da Dalt, D. Gregori. **Increased risk of Emergency Department presentations for bronchiolitis in infants exposed to air pollution**. *Risk Analysis* (August 2022).

Post-proceedings

S. Geremia, D. De Stefano. **Density-based community detection combining structure and attribute**. *Scientific Meeting of the Classification and Data Analysis Group of the Italian Statistical Society* (September 2025)

S. Geremia, F. Morea, D. De Stefano. **Visualization of proximity and role-based embeddings in a regional labour flow network**. *Scientific Meeting of the Classification and Data Analysis Group of the Italian Statistical Society* (September 2025);

S. Geremia, A. Sardo. **Investigating the Lisbon Treaty's Impact on the Co-citation Network of the Court of Justice of the European Union Case Law**. *Scientific Meeting of the Italian Statistical Society* (June 2025);

S. Geremia, D. De Stefano. **How attribute information guides community detection in leader-based social networks**. *Complex Networks & Their Applications XIII* (December 2024);

P. Dalena, S. Geremia, G. Barbati, P.A. D'Adamo. **RedKinNet: Node Centrality-Driven Kinship Matrix Reduction**. *Complex Networks & Their Applications XIII* (December 2024).

Language skills

Italian (*Mother tongue*); **English** (*Listening: C1, Reading: C1, Spoken interaction: C1, Spoken production: C1, Writing levels: C1*);

Digital skills

General skills

Information processing (*Proficient: import, tidning, analyses of health data*);
Communication (*Independent: production of static, dynamical and interactive R Markdown documents, Shiny App development*);

Program languages

R (*Proficient: Statistical and Machine Learning, Data mining*);
Python (*Independent*);
Stata (*Independent*).

Operating System and software

Tidyverse R packages suite (*Independent*); **Shiny** (*Competent*); **RStudio IDE (open)** (*Proficient*); **GitLab/GitHub** (*Independent*); **MS Windows XP** (*Independent*); **Suite MS Office** (*Proficient*);