

Gianpaolo Zammarchi

RESEARCH INTERESTS Statistical Learning, Machine Learning, Markov Chain, Topic Modeling, Eye Tracking, Big Data, Text Mining, Scientometric Analysis, Classification, Time Series

ACADEMIC POSITIONS

Research Fellow in Statistics March, 2023 - Today
Department of Economics and Business Sciences, University of Cagliari

Postdoctoral Researcher in Statistics June, 2022 - February, 2023
Department of Economics and Business Sciences, University of Cagliari

Topic: Data analysis and development of advanced training models, optimized from the point of view of human factors and based on simulation, for maritime and road transport, within the project “TECHLOG - Technological Transfer for Logistics Innovation in Mediterranean area”. Principal Investigator: Prof. Gianfranco Fancello

Research Assistant November, 2016 to May, 2018
Department of Economics and Business Sciences, University of Cagliari and CORE-COM Sardinia

Topic: Statistical analysis within the project “Information in the radio, television and web sector in Sardinia: survey preparation, data collection and processing”. Principal Investigator: Prof. Francesco Mola

VISITING POSITIONS

Institute of Statistical Mathematics, Tokyo Japan November 2023 - December 2023
Visiting researcher at the Department of Statistical Modeling Institute of Statistical Mathematics, Japan, invited by Prof. Yoshinori Kawasaki for collaborating in the development of methodologies for time series analysis

Charles University in Prague, Czech Republic December 2020 - May 2021
Visiting fellow (long-distance internship) at the Department of Probability and Mathematical Statistics of Charles University in Prague, Czech Republic, invited by Prof. Jaromir Antoch for collaborating in the development of methodologies for sentiment analysis

EDUCATION

University of Cagliari, Italy

Ph.D. in Economics and Business Sciences, Quantitative Track with Doctor Europaeus certification, April 2022

Title of the thesis: Eye Tracking and Sentiment Analysis to evaluate user behavior and opinion

Supervisor: Prof. Claudio Conversano

M.S., Managerial Economics, grade 110/110 *cum laude*, July 2018

Title of the thesis: Evaluation of web usability through eye tracking: case study of the University of Cagliari web portal

Supervisor: Prof. Luca Frigau

B.S., Economics and Business Management, grade 110/110 *cum laude*, September 2016

Title of the thesis: Analysis of university education in Italy and Sardinia in relation to Europe

Supervisor: Prof. Francesco Mola

MEMBERSHIPS

SIS - Società Italiana di Statistica

ClaDAG - Classification and Data Analysis Group

ISI - International Statistical Institute

COMMITTEE MEMBERSHIPS

Member of the University of Cagliari's Local Organizing Committee of the 50th Scientific Meeting of the Italian Statistical Society (SIS 2021)

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. **Zammarchi G**, Romano M, & Conversano C. (2024). Automatic topic title assignment with word embedding. *Journal of Classification*. doi.org/10.1007/s00357-024-09476-0
2. **Zammarchi G**, Pisanu C. Identification of genes shared between sedentary behaviour and inflammation: a bidirectional genetic correlation analysis. *Computational Statistics*. doi.org/10.1007/s00180-024-01551-9
3. **Zammarchi G**, Carta A, Columbu S, Frigau L, Musio M. (2024). A scientometric analysis of the effect of COVID-19 on the spread of research outputs. *Quality and Quantity*, 58, 2265–2287. doi.org/10.1007/s11135-023-01742-4
4. Romano M, **Zammarchi G**, Conversano C. (2023). Iterative threshold-based Naive Bayes Classifier: an efficient Tb-NB improvement. *Statistical Methods & Applications*. doi.org/10.1007/s10260-023-00721-1
5. **Zammarchi G**, Mola F, Conversano C. (2023). Impact of the COVID-19 outbreak on Italy's country reputation and stock market performance: a sentiment analysis approach. *Statistical Methods & Applications*, 32, 1001–1022. doi.org/10.1007/s10260-023-00690-5
6. **Zammarchi G**, Conversano C, Pisanu C. (2022). Investigating shared genetic bases between psychiatric disorders, cardiometabolic and sleep traits using k-means clustering and local genetic correlation analysis. *Algorithms*, 15(11), 409. doi.org/10.3390/a15110409
7. Richie-Halford A, Cieslak M, Ai L, Caffarra S, Covitz S, Franco AR, ... & Rokem A. (2022). An analysis-ready and quality controlled resource for pediatric brain white-matter research. *Scientific data*, 9(1), 1-27. doi.org/10.1038/s41597-022-01695-7
8. **Zammarchi G**, Conversano C. (2021). Application of Eye Tracking Technology in Medicine: A Bibliometric Analysis. *Vision*. 5(4):56. doi.org/10.3390/vision5040056
9. **Zammarchi G**, Frigau L, Mola F. (2021). Markov chain to analyse web usability of a university website using eye tracking data. *Statistical Analysis and Data Mining*. 14(4):331-341. doi:10.1002/sam.11512

10. **Zammarchi G**, Del Zompo M, Squassina A, Pisanu C. (2020). Increasing engagement in pharmacology and pharmacogenetics education using games and online resources: The PharmacoloGenius mobile app. *Drug Dev Res.* 81(8):985-993. doi:10.1002/ddr.21714

SHORT PAPERS

11. **Zammarchi G**. (2023). Linear random forest to predict energy consumption. In: *Cladag 2023 Book of abstracts and short papers*, 14th Scientific Meeting of the Classification and Data Analysis Group, 665-668. ISBN: 9788891935632
12. **Zammarchi G**, Romano M, Conversano C. (2023). Evolution of Media Coverage on Climate Change and Environmental Awareness: an Analysis of Tweets from UK and US Newspapers. *IFCS 2022: Classification and Data Science in the Digital Age: Studies in Classification, data analysis, and knowledge organization*, 403-411. ISBN: 9783031090349, DOI: 10.1007/978-3-031-09034-9_43
13. **Zammarchi G**, Contu G, Romano M. (2022). Evolution of scientific literature on climate change: a bibliometric analysis. *SIS 2022 Book of Short Papers*, 1273-1278. ISBN: 9788891932310
14. Romano M, **Zammarchi G**, Contu G. (2022). Iterative threshold-based Naive Bayes Classifier: an efficient Tb-NB improvement. *SIS 2022 Book of Short Papers*, 1656-1661. ISBN: 9788891932310
15. Vacca S, Ortu M, **Zammarchi G**, Destefanis G. (2022). On investigating social and financial aspects of Cardano. *SIS 2022 Book of Short Papers*, 1953-1958. ISBN: 9788891932310
16. Romano M, **Zammarchi G**, Conversano C. (2022). Threshold-based Naive Bayes Classifier: Customer Satisfaction evaluation. *10th International Conference IES 2022*, 90-94. ISBN: 9788894593358
17. **Zammarchi G**, Antoch J. (2021). Using eye-tracking data to create a weighted dictionary for sentiment analysis: the Eye dictionary. In: *Cladag 2021 Book of abstracts and short papers*, 13th Scientific Meeting of the Classification and Data Analysis Group, 436-439. e-ISBN: 9788855183406
18. **Zammarchi G**, Contu G, Frigau L. (2021). Using eye-tracking to evaluate the viewing behavior on tourist landscapes. In: *ASA 2021 Statistics and information systems for policy evaluation*, 141-146. ISBN: 9788855183048
19. Contu G, Frigau L, **Zammarchi G**, Mola F. (2021). A statistical model to identify the price determinations: the case of Airbnb. In: *Book of Short Papers SIS 2021*, 1100-1105. ISBN: 9788891927361
20. **Zammarchi G**, Conversano C, Mola F. (2020). Assessment of the effectiveness of digital flyers: analysis of viewing behavior using eye tracking. In: *Book of short papers, SIS Conference 2020*, 1036-1041. ISBN: 9788891910776
21. **Zammarchi G**, Mola F. (2019). Evaluation of the web usability of the University of Cagliari portal: an eye tracking study. *Cladag 2019 Book of short papers*, 12th Scientific Meeting of the Classification and Data Analysis Group, 468-471. ISBN: 9788883171086.

CONFERENCE
PROCEEDINGS

22. **Zammarchi G**, Mola F, Contu G, Frigau L. (2019). Valutazione della web usability attraverso l'eye tracking: il caso studio del portale dell'Università degli Studi di Cagliari. In: Il Mondo che cambia, FrancoAngeli (Milano), 278-290. ISBN: 9788891798701.
23. **Zammarchi G**, Romano M, Conversano C. (2022). Evolution of Media Coverage on Climate Change and Environmental Awareness: an Analysis of Tweets from UK and US Newspapers. IFCS book of abstracts, page 122. ISBN: 9789899895591
24. Ortu M, Romano M, **Zammarchi G**. (2022). Student Satisfaction Assessments and Natural Language Processing: A Validation Study. ISBIS 2022 Book of Abstracts, page 82. ISBN: 9791221013894
25. Contu G, Romano M, **Zammarchi G**. (2022). Textual Semi-Supervised Clustering: an Application on Booking.com Data. ISBIS 2022 Book of Abstracts, page 50. ISBN: 9791221013894
26. Contu G, Frigau L, **Zammarchi G**. (2022). A Statistical Model to Estimate the Airbnb Price. ISBIS 2022 Book of Abstracts, page 61. ISBN: 9791221013894
27. **Zammarchi G**, Contu G, Frigau L. (2021). Application of machine learning models to discriminate tourist landscapes using eye-tracking data. In: ENBIS 2021 Book of Abstracts, 12-13. ISBN: 9791220093989
28. **Zammarchi G**, Mola F, Conversano C. (2021). Statistical analysis of Twitter data to assess the relationship between sentiment towards Italy and stock exchange trend. In: Book of abstracts of the 3rd Conference on Statistics and Data Science, page 54. ISBN: 9786558992653
29. **Zammarchi G**, Pisanu C. (2020). PharmacoloGenius: Development of a mobile application to engage in pharmacology. In: Selected abstracts from pharmacology 2019, page 268. doi: 10.1111/bcp.14266

CONFERENCE
PRESENTATIONS

1. "Linear random forest to predict energy consumption", CLADAG 2023 - 14th Scientific meeting, Classification and Data Analysis Group, University of Salerno, "Fisciano Campus", Salerno (Italy), 12/09/2023
2. "Evolution of Media Coverage on Climate Change and Environmental Awareness: an Analysis of Tweets from UK and US Newspapers", IFCS 2022 - International Federation of Classification Societies conference, Porto (Portugal), 20/07/2022
3. "The effects of COVID-19 outbreak on Italy country reputation and stock exchange index", DSSV 2022 - Data Science, Statistics & Visualisation online conference. National Cheng Kung University Tainan (Taiwan), Virtual format, 29/06/2022
4. "Evolution of scientific literature on climate change: a bibliometric analysis", SIS 2022 – 51st Scientific meeting of the Italian statistical society conference. University of Campania "Luigi Vanvitelli", Caserta (Italy), 23/06/2022
5. "Application of machine learning models to discriminate tourist landscapes using eye-tracking data", ENBIS-21 (invited talk). Virtual format, 14/09/2021
6. "Using eye-tracking data to create a weighted dictionary for sentiment analysis: the Eye dictionary", CLADAG 2021 - 13th Scientific meeting, Classification and Data Analysis Group, Firenze (virtual format), 11/09/2021

7. “Using eye-tracking to evaluate the viewing behavior on tourist landscapes”, ASA 2021, Association for Applied Statistics and the University of Florence, Firenze (online pre-conference), 12/03/2021
8. “PharmacoloGenius: development of a mobile application to engage in pharmacology”, Pharmacology 2019 - British Pharmacological Society congress - Innovations in Pharmacology Education Workshop (invited talk). Edinburgh (UK), 17/12/2019
9. “Evaluation of the web usability of the University of Cagliari portal: an eye tracking study”, CLADAG 2019 - 12th Scientific meeting, Classification and Data Analysis Group, Università degli studi di Cassino e del Lazio Meridionale, Cassino (Italy), 12/09/2019

POSTER

1. “Auto-labeling topics with word embedding” (poster), CSDS 2022 - 4th Conference on Statistics and Data Science. Salvador, Brazil (virtual format), 1-3/12/2022
2. “Impact of the COVID-19 outbreak on Italy’s country reputation: a sentiment analysis approach” (poster), CSDS 2021 - 3rd Conference on Statistics and Data Science. Salvador, Brazil (virtual format), 28-30/10/2021
3. “PharmacoloGenius: development of a mobile application to engage in pharmacology” (poster), 39° Conference Italian Society of Pharmacology. Firenze, 19-23/11/2019
4. “Development of an Android application for study and research in clinical pharmacology” (poster), Pharmacology 2015. London (UK), 15-17/12/2015

REFEREE SERVICE

- Quality and Quantity
- Advances in Economics and Business
- Social Indicators Research
- Healthcare
- Sustainability
- International Journal of Environmental Research and Public Health
- Journal of Asian Architecture and Building Engineering

PROJECTS

Participation in a national research group within the project Partenariato Esteso “GRINS - Growing Resilient, INclusive and Sustainable”, Spoke7, theme 9 Economic and financial sustainability of systems and territories, Call: Partenariati Estesi PNRR, European Union Next Generation EU. Principal Investigator: Prof. Matteo Cervellati, 2022 - 2025

Participation in a national research group within the project “TECHLOG - Technological Transfer for Logistics Innovation in Mediterranean area”, Call: ENI CBC Med. Principal Investigator: Prof. Gianfranco Fancello, 2021 - 2024

Participation in a national research group within the project “L’informazione nel settore radiotelevisivo e del web in Sardegna: predisposizione indagine, raccolta ed elaborazione dei dati”, Funded by Co.re.com Sardegna. Principal Investigator: Prof. Francesco Mola, 2016 - 2018

HONORS AND
AWARDS

Second place in IASC Data Analysis Competition 2021, 20/05/2021. The 2021 competition was aimed at analyzing data relating to the quality of life, with a particular focus on the importance of results both in individual terms and for society.

Best graduate of the Faculty of Economic, Law and Political Sciences, University of Cagliari, academic year 2017/2018

Best graduate of the master's degree course in Managerial Economics, University of Cagliari, academic year 2017/2018

TEACHING
EXPERIENCE

Lecturer

PhD's Level Courses

- Lecturer of the course An introduction to Statistical Textual Analysis, PhD National Course Sustainable Development and Climate Change, coordinated by University Institute of Higher Studies of Pavia. Academic year 2023/2024. (8 hours)

Master's Level Courses

- Lecturer of the course Elements of Biostatistics, Marine Bio-Ecology degree, Faculty of Biology and Pharmacy, University of Cagliari. Academic year 2023/2024. 3 ECTS (24 hours).
- Lecturer of the course Elements of Biostatistics, Marine Bio-Ecology degree, Faculty of Biology and Pharmacy, University of Cagliari. Academic year 2022/2023. 3 ECTS (24 hours)
- Lecturer of the course Elements of Biostatistics, Marine Bio-Ecology degree, Faculty of Biology and Pharmacy, University of Cagliari. Academic year 2021/2022. 3 ECTS (24 hours)

Bachelor's Level Courses

- Lecturer of the course Statistics, Economics and Business Management degree, Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2024/2025. 6 ECTS (36 hours)
- Lecturer of the course Statistics, Economics and Business Management degree (blended), Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2024/2025. 4 ECTS (24 hours)
- Lecturer of the course Statistics, Economics and Business Management degree, Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2023/2024. 6 ECTS (36 hours)
- Lecturer of the course Statistics, Economics and Business Management degree (blended), Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2023/2024. 4 ECTS (24 hours)

Teaching Assistant

Responsibilities have included leading practice and computing lab sessions, holding office hours, creating lab content, and grading.

Master's Level Courses

- Tutor of Statistical Learning Methods for Data Science, Data Science, Business Analytics and Innovation degree, Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2020/2021. (40 hours)

Bachelor's Level Courses

- Tutor of Statistics, Economics and Business Management degree, Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2021/2022. 25 hours

- Tutor of Statistics, Economics and Business Management degree, Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2019/2020. 25 hours
- Tutor of Statistics, Economics and Business Management degree, Faculty of Economic, Law and Political Sciences, University of Cagliari. Academic year 2018/2019. 50 hours

SPECIALIZATION COURSES

- III International School on Classification and Data Analysis: Robust statistics, foundations and recent developments. Classification and Data Analysis Group of the Italian Statistical Society and the University of Milano-Bicocca, Lake of Como (Como, Italy), 02/05/2022-06/05/2022
- Machine Learning for Data Science, ISI (International Statistical Institute) and IASC (International Association for Statistical Computing), 27/09/2021-30/09/2021
- Machine Learning in Computational Biology, MLCB 2021, 22/11/2021-23/11/2021
- TDM Urban Computing School 2021, University of Cagliari, 21/06/2021-25/06/2021
- Machine Learning virtual Summer School (MLvSS) Duke University, 14/06/2021 - 17/06/2021
- 3rd LARS-IASC School on Computational Statistics and Data Science LARS-IASC, 17-18/04/2021
- Introduction to Finite Mixture Modelling and Latent Class Analysis course, PhD programme of Mathematics and Computer Science, University of Cagliari, 18/02/2021-02/03/2021
- IASC/LARS Webinar on Computational Statistics and Data Science Statistical Inference in Markov Processes IASC/LARS, 23/11/2020-26/11/2020
- Statistical Learning course, Phd Programme in Economics and Statistics, University of Milano-Bicocca, 5/10/2020-30/10/2020
- Sequential Monte Carlo methods, Uppsala University, Uppsala (Sweden), 26/08/2019-30/08/2019
- Scuola di Calcolo Scientifico con MATLAB 2018: Corso Avanzato U4Learn (University of Palermo), 30/07/2018 – 03/08/2018
- Seminar “Programmazione Orientata agli Oggetti e Scripting in Python”, University of Cagliari, 03/07/2018 – 19/07/2018
- Machine learning, Statistical Horizons LLC – Temple University, Philadelphia (USA), 20/04/2018 – 21/04/2018

TECHNICAL SKILLS

- Advanced experience in the use of the R environment
- Advanced experience in the analysis of eye tracking data using Tobii Studio software
- Experience in the use of MATLAB, SPSS, Stata, GraphPad
- Knowledge of Java, C, Python programming languages
- Experience in the use of the Office package (Access, Excel, Word, Powerpoint) and the main operating systems
- Experience in managing websites, in particular through the Wordpress and Joomla platforms
- English language B2 level certification

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby (Regolamento UE 2016/679).