

GIORGIA ZACCARIA

PERSONAL DATA

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🌐 [Personal Page](#) ◇ [Institutional Page](#) ◇ [Google Scholar](#) ◇ [Research Gate](#) ◇ [ORCID](#)
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EMPLOYMENT

Postdoctoral Research Fellow

October 2022 – Present

University of Milano-Bicocca, Rome, Italy
Department of Statistics and Quantitative Methods
Supervisor: Prof. Francesca Greselin

Research Fellow

July 2021 – June 2022

University of Rome Unitelma Sapienza, Rome, Italy
Department of Law and Economics
Supervisor: Prof. Pasquale Sarnacchiaro

EDUCATION

Ph.D. in Methodological Statistics

November 2018 – February 2022

University of Rome La Sapienza, Rome, Italy
Department of Statistical Sciences
Thesis title: *Ultrametric models for hierarchical dimensionality reduction*
Supervisor: Prof. Maurizio Vichi

Final evaluation: Excellent

M.Sc. in Statistical and Decision Sciences

September 2016 – October 2018

Curriculum: European Master in Official Statistics (EMOS)
University of Rome La Sapienza, Rome, Italy
Department of Statistical Sciences

Final score: 110/110 cum laude

Internship

July 2018

Alleanza per lo Sviluppo Sostenibile (ASviS), Rome, Italy

B.Sc. in Statistics, Economics and Society

September 2013 – October 2016

University of Rome La Sapienza, Rome, Italy
Department of Statistical Sciences

Final score: 110/110 cum laude

High School Diploma in Scientific Studies

September 2008 – July 2013

Liceo Scientifico Statale Aristotele, Rome, Italy
Bilingual Diploma: English and French.

Final score: 100/100

RESEARCH VISITS

Tilburg University, Tilburg, The Netherlands

November 2021 – January 2022

Department of Methodology and Statistics
Supervisor: Prof. Jeroen K. Vermunt

RESEARCH INTERESTS

Multivariate Statistics

Ultrametric Models

Model-Based Clustering

Dimensionality Reduction

Hierarchical Models

Latent Variable Models

AWARDS, GRANTS & SCHOLARSHIP

Research Grant for Junior Researcher, "Avvio alla ricerca"

October 2020

University of Rome La Sapienza, Rome, Italy

Principal Investigator

Project title: *Hierarchical latent variable models for studying multidimensional phenomena in heterogeneous populations*

Research Grant for Medium Projects

October 2019

University of Rome La Sapienza, Rome, Italy

Investigator (Principal Investigator: Prof. Donatella Vicari)

Project title: *Models, methods and classification of transition data: analysis of the students mobility among degree courses of Italian universities*

Excellent Graduate Award

May 2019

Fondazione Roma Sapienza, Rome, Italy

Excellent Graduate of the Faculty of Information Engineering, Computer Science and Statistics, a.y. 2017/2018

Scholarship

November 2018

University of Rome La Sapienza, Rome, Italy

Ph.D. School of Statistical Sciences

Three years of Ph.D. scholarship

PUBLICATIONS

UNDER REVIEW

- Cavicchia, C., Sarnacchiaro, P., Vichi, M., **Zaccaria, G.** (2022+) A model-based ultrametric composite indicator for studying waste management in Italian municipalities. *Under second review*.

REFERRED JOURNAL ARTICLES

3. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2022) Hierarchical Disjoint Principal Component Analysis. *AStA Advances in Statistical Analysis*, doi: 10.1007/s10182-022-00458-4 ([link](#)).

2. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2022) Gaussian mixture model with an extended ultrametric covariance structure. *Advances in Data Analysis and Classification*, 16(2), 399-427 ([link](#)).

1. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2020) The ultrametric correlation matrix for modelling hierarchical latent concepts. *Advances in Data Analysis and Classification*, 14(4), 837-853 ([link](#)).

ARTICLES EDITED IN VOLUMES AND PH.D. THESIS

3. Mingione, M., Vichi, M., **Zaccaria, G.** (2022) Complex Dimensionality Reduction: Ultrametric Models for Mixed-Type Data. In: L.A. Garcia-Escudero, A. Gordaliza, A. Mayo, M. Asunción Lubiano Gomez, M. Angeles Gil, P. Grzegorzewski, O. Hryniewicz (Eds.) *Building Bridges between Soft and Statistical Methodologies for Data Science. SMPS 2022. Advances in Intelligent Systems and Computing*, vol 1433. Springer, Cham ([link](#)).

2. **Zaccaria, G.** (2022) Ultrametric models for hierarchical dimensionality reduction. *Ph.D. thesis, XXXIV cycle* ([link](#)).

1. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2020) Exploring hierarchical concepts: theoretical and application comparisons. In: T. Imaizumi, A. Nakayama, S. Yokoyama, S. (Eds.). *Advanced Studies in Behaviormetrics and Data Science. Behaviormetrics: Quantitative Approaches to Human Behavior*, vol. 5 (pp. 315-328). Springer, Singapore ([link](#)).

REFERRED CONFERENCE PROCEEDINGS

9. **Zaccaria, G.**, Sarnacchiaro, P. (2022) An ultrametric model for building a composite indicator system to study climate change in European countries. In: A. Balzanella, M. Bini, C. Cavicchia, R. Verde. (Eds.). *Book of Short Papers SIS 2022* (pp. 970-974). Pearson. ISBN: 978-88-9193-231-0.
8. Cavicchia, C., Sarnacchiaro, P., Vichi, M., **Zaccaria, G.** (2022) An ultrametric model to build a Composite Indicators system. In: R. Lombardo, I. Camminatiello, V. Simonacci (Eds.). *Book of Short Papers, 10th International Conference IES 2022 Innovation & Society 5.0: Statistical and Economic Methodologies for Quality Assessment, Department of Economics, University of Campania L. Vanvitelli, January 27th - 28th 2022* (pp. 208-211). Sesto San Giovanni: PKE - Professional Knowledge Empowerment s.r.l. ISBN: 978-88-94593-35-8.
7. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2021) A parsimonious parameterization of a nonnegative correlation matrix. In: S. Ingrassia, A. Punzo, R. Rocci (Eds.). *MBC2 2020 Book of Short Papers of the 5th International Workshop on Models and Learning for Clustering and Classification, Catania* (pp. 21-26). Milano: Ledizioni. ISBN: 978-88-5526-539-3.
6. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2021) Model-based clustering with parsimonious covariance structure. In: G. C. Porzio, C. Rampichini, C. Bocci (Eds.). *CLADAG 2021 Book of Abstracts and Short Papers. 13th Scientific Meeting of the Classification and Data Analysis Group, Firenze, September 9-11, 2021* (pp. 296-299). Firenze: Firenze University Press. ISBN: 978-88-5518-340-6.
5. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2021) The ultrametric covariance model for modelling teachers' job satisfaction. In: C. Perna, N. Salvati, F. Schirripa Spagnolo (Eds.). *Book of Short Papers SIS 2021* (pp. 1319-1324). Pearson. ISBN: 978-88-9192-736-1.
4. **Zaccaria, G.**, Vichi, M. (2020) Exploring drug consumption via an ultrametric correlation matrix. In: A. Pollice, N. Salvati, F. Schirripa Spagnolo (Eds.). *Book of Short Papers SIS 2020* (pp. 372-377). Pearson. ISBN: 978-88-9191-077-6.
3. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2019) Dimensionality reduction via hierarchical factorial structure. In G. C. Porzio, F. Greselin, S. Balzano (Eds.). *Book of Short Papers, CLADAG 2019, 11-13 September 2019, Cassino* (pp. 116-119). Cassino: Centro Editoriale di Ateneo Università di Cassino e del Lazio Meridionale. ISBN: 978-88-8317-108-6.
2. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2019) A new hierarchical model-based composite indicator on climate change. In M. Bini, P. Amenta, A. D'Ambra, I. Camminatiello (Eds.). *Statistical Methods for Service Quality Evaluation, Book of Short Papers of IES 2019 in Roma, Italia, 4-5 July* (pp. 346-349). Cuzzolin. ISBN: 978-88-86638-65-4.
1. Cavicchia, C., Vichi, M., **Zaccaria, G.** (2019) Hierarchical Clustering and Dimensionality Reduction for Big Data. In G. Arbia, S. Peluso, A. Pini, G. Rivellini (Eds.). *Smart Statistics for Smart Applications, Book of Short Papers SIS 2019* (pp. 173-180). Pearson. ISBN: 978-88-9191-510-8.

PRESENTATIONS AND SEMINARS

INVITED PRESENTATIONS

CMStatistics 2022

December 2022

15th International Conference of the ERCIM WG on Computational and Methodological Statistics
King's College London, London, United Kingdom

ECDA 2022

September 2022

European Conference on Data Analysis
University of Naples, Naples, Italy

CONTRIBUTED PRESENTATIONS

CESS 2022 Conference of the European Statistics Stakeholders Sapienza University of Rome, Rome, Italy	<i>October 2022</i>
IFCS 2022 17th Conference of the International Federation of Classification Societies University of Porto, Porto, Portugal	<i>July 2022</i>
SIS 2022 51st Scientific Meeting of the Italian Statistical Society University of Campania Luigi Vanvitelli, Caserta, Italy	<i>June 2022</i>
IES 2022 Innovation & Society 5.0: Statistical and Economic Methodologies for Quality Assessment University of Campania Luigi Vanvitelli, Capua, Italy	<i>January 2022</i>
8th Annual Workshop of the Ph.D. School in Statistical Sciences University of Rome La Sapienza, Rome, Italy	<i>July 2021</i>
DSSV-ECDA 2021 Data Science, Statistics & Visualisation and the European Conference on Data Analysis Erasmus University Rotterdam, Rotterdam, The Netherlands (Virtual)	<i>July 2021</i>
SIS 2021 50th Scientific Meeting of the Italian Statistical Society University of Pisa, Pisa, Italy (Virtual)	<i>June 2021</i>
7th Annual Workshop of the Ph.D. School in Statistical Sciences University of Rome La Sapienza, Rome, Italy	<i>February 2020</i>
IFCS 2019 16th Conference of the International Federation of Classification Societies Thessaloniki, Greece	<i>August 2019</i>
IES 2019 Statistical evaluation systems at 360°: techniques, technologies and new frontiers European University of Rome, Rome, Italy	<i>July 2019</i>
6th Annual Workshop of the Ph.D. School in Statistical Sciences University of Rome La Sapienza, Rome, Italy	<i>June 2019</i>
ECDA 2019 European Conference on Data Analysis University of Bayreuth, Bayreuth, Germany	<i>March 2019</i>
Statistics Beyond 2020: challenges and risks European Statistics Day 2017, ESAC Lisbon, Portugal Panel Member as European Master in Official Statistics (EMOS) Student	<i>October 2017</i>

TEACHING

Adjunct Lecturer Department of Psychics, University of Milano-Bicocca, Milan, Italy Advanced Foundations of Statistics for AI (Master, English)	<i>October 2022 – Present</i>
Student Tutor Department of Psychics, University of Milano-Bicocca, Milan, Italy Advanced Foundations of Statistics for AI (Master, English)	<i>October 2022 – Present</i>
Lecturer	<i>March 2022 – March 2022</i>

Istituto Nazionale per l'Analisi delle Politiche Pubbliche (INAPP), Rome, Italy
Principal Component Analysis with R (Public Administration Training Course, Italian)
Adjunct Lecturer *February 2022 – Present*
Department of Law and Economics, University of Rome Unitelma Sapienza, Rome Italy
Regression Models (II Level Master Course, Italian)
Adjunct Lecturer *February 2022 – Present*
Department of Law and Economics, University of Rome Unitelma Sapienza, Rome Italy
Statistical Models for Social and Economic Analyses (II Level Master Course, Italian)
Teaching Assistant *February 2022 – September 2022*
Department of Economics and Finance, LUISS Guido Carli, Rome Italy
Statistics, Prof. Marco Perone Pacifico (Bachelor, English)
Adjunct Lecturer *November 2021 – Present*
Department of Law and Economics, University of Rome Unitelma Sapienza, Rome Italy
Basic Statistics and Mathematics (Master, English)
Teaching Assistant *March 2021 – July 2022*
Department of Medicine and Pharmacy, University of Rome La Sapienza, Rome Italy
Medical Statistics, Prof. Maurizio Vichi (Master, Italian)
Student Tutor *January 2021 – Present*
Department of Law and Economics, University of Rome Unitelma Sapienza, Rome Italy
Statistics and Mathematics (Bachelor and Master, Italian and English)
Subject Expert *October 2020 – Present*
Department of Law and Economics, University of Rome Unitelma Sapienza, Rome Italy
Statistics and Mathematics
Teaching Assistant *March 2020 – September 2020*
Department of Political Sciences, University of Roma Tre, Rome Italy
Statistics, Dr. Domenico Cucina (Bachelor, Italian)
Teaching Assistant *September 2019 – June 2022*
Department of Statistical Sciences, University of Rome La Sapienza, Rome Italy
Advances in Data Analysis and Statistical Modelling, Prof. Maurizio Vichi (Master, English)
Teaching Assistant *September 2019 – June 2022*
Department of Statistical Sciences, University of Rome La Sapienza, Rome Italy
Multivariate Statistics, Prof. Maurizio Vichi (Bachelor, Italian)
Teaching Assistant *September 2019 – December 2019*
Department of Statistical Sciences, University of Rome La Sapienza, Rome Italy
Statistics, Prof. Maria Brigida Ferraro, Prof. Stefania Gubbiotti, Prof. Valeria Sambucini (Bachelor, Italian)
Teaching Assistant *March 2019 – July 2022*
Department of Medicine and Pharmacy, University of Rome La Sapienza, Rome Italy
Statistics for Research and Technology, Prof. Maurizio Vichi (Master, Italian)
Teaching Assistant *February 2019 – September 2019*
Department of Statistical Sciences, University of Rome La Sapienza, Rome Italy
Statistical Inference, Prof. Fulvio De Santis (Bachelor, Italian)

ACADEMIC SERVICES

Referee

Advances in Data Analysis and Classification (ADAC), SN Business & Economics (SNBE), Metron, Computational Statistics (COST), Annals of Operations Research (ANOR), Book of Short Papers SIS 2022.

Member of the Local Organizing Committee of CESS 2022

Conference of European Statistics Stakeholders 2022 ([link](#))

October 20-21, 2022, Rome, Italy

Chair of the y-SIS Invited Session "Advances in Dimensionality Reduction" of ECDA 2022

European Conference on Data Analysis ([link](#))

September 14-16, 2022, Naples, Italy

Organizer and chair of the y-SIS Solicited Session "Advances in Clustering" of SIS 2022

51st Scientific Meeting of the Italian Statistical Society ([link](#))

June 22-24, 2022, Caserta, Italy

Organizer of the 8th Annual Workshop of the Ph.D. School in Statistical Sciences

June 2021, University of Rome La Sapienza, Rome, Italy

SOCIETY MEMBERSHIPS

SIS, y-SIS and CLADAG-SIS Member

July 2019 – Present

Member of the Italian Statistical Society (Società Italiana di Statistica, SIS), Young SIS and CLAssification and Data Analysis Group (CLADAG)

IAOS Member

January 2018 – December 2018

Member of the International Statistical Society

LANGUAGES

Italian Mother tongue

English Fluent

French Good

COMPUTER SKILLS

Languages MATLAB, R, R Studio, SAS, SAS Enterprise Miner 14, SPSS, LaTeX

Software Microsoft Office

Certifications SAS Predictive Modeler Using SAS Enterprise Miner 14 (October 8, 2018)

OTHER EXPERIENCES

IELTS Invigilator

December 2015 – March 2019

British Council

Rome, Italy

INCREASE Delegate

June 2012

XII International Human Right Council, OLMUN

Oldenburg, Germany

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

Milan, October 7th, 2022