

Giorgia Zaccaria

Curriculum Vitae

✉ giorgia.zaccaria@unitelmasapienza.it
giorgia.zaccaria@uniroma1.it



Personal Information

Email, giorgia.zaccaria@unitelmasapienza.it, giorgia.zaccaria@uniroma1.it.

Personal Pages, *GitHub*, *University of Rome Unitelma Sapienza*, *University of Rome La Sapienza*, *Google Scholar*, *ResearchGate*.

Current Position

November 2021 – present **Research Fellow**, *University of Rome Unitelma Sapienza*, Rome, Italy.
Department of Law and Economics
Supervisor: Prof. Pasquale Sarnacchiaro.

Education

November 2021 – January 2022 **Visiting Ph.D. Student**, *Tilburg University*, Tilburg, The Netherlands.
Department of Methodology and Statistics
Supervisor: Prof. Jeroen Vermunt.

November 2018 – February 2022 **Ph.D. in Methodological Statistics**, *University of Rome La Sapienza*, Rome, Italy.
Department of Statistical Sciences.
Thesis title: "Ultrametric models for hierarchical dimensionality reduction" (in English).
Supervisor: Prof. Maurizio Vichi.

September 2016 – October 2018 **M.Sc. in Statistical and Decision Sciences - European Master in Official Statistics (EMOS)**, *University of Rome La Sapienza*, Rome, Italy, *110/110 cum laude*.
Thesis title: "A hierarchical and parsimonious model for building a composite indicator of sustainable development".
Supervisor: Prof. Maurizio Vichi.

July 2018 **Internship**, *Alleanza per lo Sviluppo Sostenibile (ASviS)*, Rome, Italy.

September 2013 – October 2016 **B.Sc. in Statistics, Economics and Society**, *University of Rome La Sapienza*, Rome, Italy, *110/110 cum laude*.
Thesis title: "Resampling techniques for nonparametric inference: the bootstrap method".
Supervisor: Prof. Marco Perone Pacifico.

September 2008 – July 2013 **High School Diploma in Scientific Studies**, *Liceo Scientifico Statale Aristotele*, Rome, Italy, *100/100*.
Bilingual Diploma: English and French.

Awards, Grants & Fellowships

- October 2020 **Grant for Junior Researcher "Avvio alla Ricerca"**, *University of Rome La Sapienza*, Rome, Italy.
Project Title: "Hierarchical latent variable models for studying multidimensional phenomena in heterogeneous populations".
- May 2019 **Graduation Award**, *Fondazione Roma Sapienza*, Rome, Italy.
Excellent Graduate Award - Premio Laureato Eccellente, Faculty of Ingegneria dell'Informazione, Informatica e Statistica, a.y. 2017/2018.
- November 2018 **Fellowship**, *University of Rome La Sapienza*, Rome, Italy.
Three years of Ph.D. fellowship.

Publications

- 1 Cavicchia, C., Vichi, M., Zaccaria, G. (2022), Gaussian mixture model with an extended ultrametric covariance structure. *Advances in Data Analysis and Classification*, doi: 10.1007/s11634-021-00488-x ([link](#)).
- 2 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](#)).
- 3 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](#)).

Monographs and Books

- 1 Zaccaria, G. (2022), Ultrametric models for hierarchical dimensionality reduction. *Ph.D. thesis (XXXIV cycle)*. Repository: <https://iris.uniroma1.it/handle/11573/1628179?mode=full>.4076 (Sapienza University of Rome) .

Conference Publications

- 1 Cavicchia, C., 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.
- 2 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: Le EdizMBCioni. ISBN: 978-88-5526-539-3.
- 3 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.
- 4 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.
- 5 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.

- 6 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.
- 7 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 Rome, Italy, 4-5 July* (pp. 346-349). Cuzzolin. ISBN: 978-88-86638-65-4.
- 8 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.

Teaching Experiences

- March 2022 – **Lecturer for Public Administration training courses**, *Istituto Nazionale per l'Analisi delle Politiche Pubbliche (INAPP)*, Rome, Italy.
Course: Principal Component Analysis with R (in Italian)
- November 2021 – **Lecturer**, *University of Rome Unitelma Sapienza*, Rome, Italy.
Course: Basic Statistics and Mathematics, Department of Law and Economics.
present
- February 2022 – **Teaching assistant**, *LUISS Guido Carli*, Rome, Italy.
Course: Statistics (Prof. Marco Perone Pacifico), Department of Economics and Finance.
present
- November 2021 – **Lecturer**, *University of Rome Unitelma Sapienza*, Rome, Italy.
Course: Basic Statistics and Mathematics, Department of Law and Economics.
present
- March 2021 – **Teaching assistant**, *University of Rome La Sapienza*, Rome, Italy.
Course: Statistica Medica (Prof. Maurizio Vichi), Faculty of Pharmacy and Medicine.
present
- January 2021–present **Student Tutor**, *University of Rome Unitelma Sapienza*, Rome, Italy.
Subject areas: Statistica e Metodi Matematici per le Decisioni, Geografia Economica, Department of Law and Economics.
- October 2020 – **Subject Expert (Cultore della Materia)**, *University of Rome Unitelma Sapienza*, Rome, Italy.
Courses: Statistica, Statistica per le imprese, Statistica per la P.A., Metodi statistici per i mercati finanziari, Indicatori e metodologie statistiche per lo sviluppo sostenibile, Computational Statistics (Prof. Pasquale Sarnacchiaro), Department of Law and Economics.
- March 2020 – **Teaching assistant**, *University of Rome Roma Tre*, Rome, Italy.
September 2020 Course: Statistica (Dr. Domenico Cucina), Department of Political Sciences.
- September 2019 – **Teaching assistant**, *University of Rome La Sapienza*, Rome, Italy.
Course: Advances in Data Analysis and Statistical Modelling (Prof. Maurizio Vichi), Department of Statistical Sciences.
present
- September 2019 – **Teaching assistant**, *University of Rome La Sapienza*, Rome, Italy.
Course: Statistica Multivariata (Prof. Maurizio Vichi), Department of Statistical Sciences.
present
- September 2019 – **Teaching assistant**, *University of Rome La Sapienza*, Rome, Italy.
Course: Statistica di Base (Prof.ssa Maria Brigida Ferraro, Prof.ssa Stefania Gubbio, Prof.ssa Valeria Sambucini), Department of Statistical Sciences.
December 2019
- March 2019 – **Teaching assistant**, *University of Rome La Sapienza*, Rome, Italy.
present Course: Statistica per la Ricerca Sperimentale e Tecnologica (Prof. Maurizio Vichi), Faculty of Pharmacy and Medicine.

February 2019 – July 2019 **Teaching assistant**, *University of Rome La Sapienza*, Rome, Italy.
 Course: Inferenza Statistica (Prof. Fulvio De Santis), Department of Statistical Sciences.

Attended National and International Conferences

- January 2022 **G. Zaccaria**, *An ultrametric model to build a composite indicator system*, with C. Cavicchia, P. Sarnacchiaro & M. Vichi, *Innovation & Society 5.0: Statistical and Economic Methodologies for Quality Assessment*, **IES 2022**, 27/01/2022 – 28/01/2022, Capua, Italy.
 Contributed session: Assessing Performance
- November 2021 **G. Zaccaria**, *Ultrametric models for studying multidimensional phenomena with applications in psychometrics and social sciences*, **Invited seminar**, Tilburg University, Department of Methodology and Statistics, Tilburg, The Netherlands.
- July 2021 **G. Zaccaria**, *Gaussian mixture model with a new parsimonious parameterization of the covariance matrix*, with C. Cavicchia & M. Vichi, , **8th Annual Workshop of the Ph.D. School in Statistical Sciences**, 15/07/2021 - 16/07/2021, University of Rome La Sapienza, Rome, Italy.
- July 2021 **G. Zaccaria**, *A new parsimonious parameterization of the covariance matrix in Gaussian mixture models*, with C. Cavicchia & M. Vichi, *Data Science, Statistics & Visualisation and the European Conference on Data Analysis*, **DSSV-ECDA 2021**, 07/07/2021 – 09/07/2021, Rotterdam, The Netherlands.
 Virtual conference. Short talk session
- June 2021 **G. Zaccaria**, *The ultrametric covariance model for modelling teachers' job satisfaction*, with C. Cavicchia & M. Vichi, *50th Edition of the Scientific Meeting of the Italian Statistical Society*, **SIS 2021**, 21/06/2021 – 25/06/2021, Pisa, Italy.
 Virtual conference. Contributed session: Social indicators: applications and methods
- February 2020 **G. Zaccaria**, *The ultrametric correlation matrix for modelling hierarchical factorial structure*, with C. Cavicchia & M. Vichi, **7th Annual Workshop of the Ph.D. School in Statistical Sciences**, 12/02/2020, University of Rome La Sapienza, Rome, Italy.
- August 2019 **G. Zaccaria**, *Model-based hierarchical parsimonious clustering and dimensionality reduction*, with C. Cavicchia & M. Vichi, *16th Conference of the International Federation of Classification Societies*, **IFCS 2019**, 26/08/2019 – 29/08/2019, Thessaloniki, Greece.
 Contributed session: CONTR5: Dimension reduction and clustering I
- July 2019 **G. Zaccaria**, *A new hierarchical model-based composite indicator on climate change*, with C. Cavicchia & M. Vichi, *Statistical evaluation systems at 360: techniques, technologies and new frontiers*, **IES 2019**, 04/07/2019 – 05/07/2019, Rome, Italy.
 Contributed session: Environmental Processes, Human Activities and Their Interaction
- June 2019 **G. Zaccaria**, *Hierarchical Disjoint Principal Component Analysis*, with C. Cavicchia & M. Vichi, **6th Annual Workshop of the Ph.D. School in Statistical Sciences**, 12/06/2019, University of Rome La Sapienza, Rome, Italy.
- March 2019 **G. Zaccaria**, *Hierarchical Disjoint Principal Component Analysis*, with C. Cavicchia & M. Vichi, *European Conference on Data Analysis*, **ECDA 2019**, 18/03/2019 – 20/03/2019, Bayreuth, Germany.
 Contributed session: Dimensionality Reduction 1
- October 20, 2017 **Panel Member**, *Statistics Beyond 2020: challenges and risks*, "The value of Official Statistics as a Public Good" conference, Lisbon, Portugal.
 Panel Member as European Master in Official Statistics (EMOS) Student - European Statistics Day 2017, ESAC.

Academic Services

Referee, *Advances in Data Analysis and Classification (ADAC)*, *SN Business & Economics*, *Metron*, *Computational Statistics (COST)*.

Local Organizing Committee Member of CESS 2022, *Conference of European Statistics Stakeholders 2022, 20-21/10/2022, Rome, Italy.*

Organizer of a solicited session of SIS 2022, *51st Scientific Meeting of the Italian Statistical Society, 22-24/06/2022, Caserta, Italy.*

Organizer of the 8th Annual Workshop of the Ph.D. School in Statistical Sciences, *Department of Statistical Sciences, University of Rome La Sapienza, 15-16/07/2021, Rome, Italy.*

Society Memberships

July 2019 – **SIS, y-SIS and CLADAG-SIS Member.**

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

January 2018 **IAOS Member.**

– December 2018 Member of the International Statistical Society.

Other Experiences

December 2015 – March 2019 **IELTS Invigilator**, *British Council, Rome, Italy.*
IELTS Invigilator for written and oral exam sessions.

June 2012 **INCREASE Delegate**, *XII International Human Right Council, OLMUN, Oldenburg, Germany.*

Languages

Italian Mother tongue

English Fluent

FCE Cambridge Certification, B2

French Good

Diplôme d'études en langue française, DELF B2

Computer skills

Languages and Software.

MATLAB, R, R Studio, SAS, SAS Enterprise Miner 14, SPSS, LaTeX, Microsoft Office.

Certifications.

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

Operating Systems.

Windows.

In compliance with the GDPR and Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance with art. 7 of the above mentioned Decree.

Rome, April 21, 2022