CARLO CAVICCHIA

PERSONAL DATA

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🌐 Personal Page ◇ Institutional Page ◇ Google Scholar ◇ ORCiD ◇ Research Gate

CURRENT POSITION

Assistant Professor (Universitair Docent 1, UD1) of Statistics   *December 2024 - Present*
Econometric Institute, Erasmus School of Economics, Erasmus Rotterdam University, Rotterdam

EDUCATION

Masterclass Supervising PhD Research   *December 2024*
Erasmus University Rotterdam, Rotterdam
Dutch University Teaching Qualification UTQ-BKO   *January 2022 - June 2022*
Risbo, Erasmus University Rotterdam, Rotterdam
Ph.D. in Statistics   *November 2016 - February 2020*
Department of Statistical Sciences, University of Rome La Sapienza, Rome
Thesis title: *Hierarchical latent variable models for dimensionality reduction: an application on composite indicators*; Supervisor: Prof. M. Vichi
MSc Degree in Statistics and Decision Science   *November 2013 - January 2016*
University of Rome La Sapienza, Rome   110/110 with honors
BSc Degree in Statistics   *November 2009 - July 2013*
University of Rome La Sapienza, Rome   105/110

QUALIFICATIONS

National Qualification for Associate Professor (Italy, ASN II fascia), Statistics (SC 13/D1)

RESEARCH AND TEACHING INTERESTS

Hierarchical Models	Non-parametric Statistics	Data Science
Latent Variable Models	Composite Indicators	Unsupervised Classification

RESEARCH EXPERIENCES

Research visit   *November 2024*
Department of Economics, Management and Institutions, Federico II University of Naples, Naples
Guest of Prof. P. Sarnacchiaro
Research visit   *November 2019 – December 2019*
Econometric Institute, Erasmus School of Economics, Erasmus Rotterdam University, Rotterdam
Guest of Prof. P.J.F. Groenen
Research fellowship   *May 2019 – April 2020*
Department of Law and Economics, University of Rome UnitelmaSapienza, Rome
Supervisor: Prof. P. Sarnacchiaro
Researcher on a project   *March 2016 – November 2018*
Department of Statistical Sciences, University of Rome La Sapienza, Rome
Title: *Development of a procedure to detect and manage outliers for big data*
Supervisor: Prof. M. Vichi and ENEA

Researcher on a project *March 2016 – January 2017*
Department of Statistical Sciences, University of Rome La Sapienza, Rome
Title: *Construction of a hierarchical non-negative and disjoint composite indicator for a set of quantitative variables*
Supervisor: Prof. M. Vichi

AWARDS AND GRANTS

IFCS Chikio Hayashi Award (1000.- USD) *July 2024*
International Federation of Classification Societies, San Jose (Costa Rica)
ESE Starter grant (300000.- EUR) *September 2023*
Erasmus School of Economics, Erasmus Rotterdam University, Rotterdam (The Netherlands)
Research Grant for Junior Researchers (1270.- EUR) *August 2017*
University of Rome La Sapienza, Rome (Italy)
Best report of Stats under the stars[3] *June 2017*
Italian Statistical Society (SIS), Florence (Italy)
Ph.D. scholarship (3 years) *August 2016*
University of Rome La Sapienza, Rome (Italy)

FEATURED PUBLICATIONS

Willemsen, R., C. Cavicchia, W. van den Heuvel, and M. van de Velden: *An Exact Solution Approach for Hierarchical Clustering.* In: *INFORMS Journal on Computing* (2025). DOI: 10.1287/ijoc.2024.0903.

Bottazzi Schenone, M., C. Cavicchia, M. Vichi, and G. Zaccaria: *Ultrametric Factor Analysis for building hierarchies of reliable and unidimensional latent concepts.* In: *Psychometrika* (2025). DOI: 10.1017/psy.2025.6.

Velden, M. van de, A. Iodice D'Enza, A. Markos, and C. Cavicchia: *A general framework for implementing distances for categorical variables.* In: *Pattern Recognition* 153 (2024), p. 110547. DOI: https://doi.org/10.1016/j.patcog.2024.110547.

Cavicchia, C., M. Vichi, and G. Zaccaria: *Parsimonious Ultrametric Gaussian Mixture Models.* In: *Statistics and Computing* 34 (2024), p. 108. DOI: 10.1007/s11222-024-10405-9.

Cavicchia, C. and P. Sarnacchiaro: *A new hierarchical composite indicator model for ranking the top 20 European football teams.* In: *Quality and Quantity* 58.5 (2024), pp. 4033–4051. DOI: 10.1007/s11135-024-01842-9.

Cavicchia, C., P. Sarnacchiaro, M. Vichi, and G. Zaccaria: *A model-based ultrametric composite indicator for studying waste management in Italian municipalities.* In: *Computational Statistics* 39.1 (2024), pp. 21–50. DOI: 10.1007/s00180-023-01333-9.

Cavicchia, C., M. Vichi, and G. Zaccaria: *Hierarchical Disjoint Principal Component Analysis.* In: *Advances in Statistical Analysis* 107.3 (2023), pp. 537–574. DOI: 10.1007/s10182-022-00458-4.

Vichi, M., C. Cavicchia, and P.J.F. Groenen: *Hierarchical Means Clustering.* In: *Journal of Classification* 39.3 (2022), pp. 553–577. DOI: 10.1007/s00357-022-09419-7.

Cavicchia, C., M. Vichi, and G. Zaccaria: *Gaussian Mixture Model with an extended ultrametric covariance structure.* In: *Advances in Data Analysis and Classification* 16.2 (2022), pp. 399–427. DOI: 10.1007/s11634-021-00488-x.

Cavicchia, C. and M. Vichi: *Second-order disjoint factor analysis.* In: *Psychometrika* 87.1 (2022), pp. 289–309. DOI: 10.1007/s11336-021-09799-6.

Cavicchia, C. and P. Sarnacchiaro: *A multi-group higher-order factor analysis for studying the gender-effect in teacher job satisfaction.* In: *METRON* 80.1 (2022), pp. 23–38. DOI: `10.1007/s40300-021-00204-x`.

Cavicchia, C. and P. Sarnacchiaro: *The effect of a new e-tivity on students' performance and satisfaction in an online course.* In: *Statistica Applicata - Italian Journal of Applied Statistics* 33.2 (2021), pp. 163–175. DOI: `10.26398/IJAS.0033-009`.

Cavicchia, C., P. Sarnacchiaro, and M. Vichi: *A composite indicator for the waste management in the EU via hierarchical disjoint non-negative factor analysis.* In: *Socio-Economic Planning Sciences* 73 (2021), p. 100832. DOI: `10.1016/j.seps.2020.100832`.

Cavicchia, C. and M. Vichi: *Statistical model-based composite indicators for tracking coherent policy conclusions.* In: *Social Indicators Research* 156.2 (2021), pp. 449–479. DOI: `10.1007/s11205-020-02318-7`.

Cavicchia, C., M. Vichi, and G. Zaccaria: *The ultrametric correlation matrix for modelling hierarchical latent concepts.* In: *Advances in Data Analysis and Classification* 14.4 (2020), pp. 837–853. DOI: `10.1007/s11634-020-00400-z`.

INVITED TALKS AND SEMINARS

ISI 2025 - 65th International Statistical Institute World Statistics Congress The Hague, Netherlands	*October 2025*
Seminar "Distances for mixed data: issues, solutions and a new KNN approach" DISES Department - Federico II University of Naples	*November 2024*
IFCS 2024 - 18th Conference of the IFCS San José, Costa Rica	*July 2024*
SIS 2024 - 52nd Scientific meeting of the Italian Statistical Society Bari, Italy	*June 2024*
Seminar "Convex clustering of mixed numerical and categorical data" DIETI Department - Federico II University of Naples	*May 2024*
Workshop on "Statistical Computing and Robust Inference for High Dimensional Data" Taipei, Taiwan	*December 2023*
ISI 2023 - 64th International Statistical Institute World Statistics Congress Ottawa, Canada	*July 2023*
DSSV-ECDA 2023 - Joint conference of Data Science, Statistics & Visualisation and the European Conference on Data Analysis Antwerp, Belgium	*July 2023*
SIS 2023 - Statistical Learning, Sustainability and Impact Evaluation Ancona, Italy	*June 2023*
Seminar "Convex clustering of mixed numerical and categorical data" Statistical Sciences Department - Sapienza University (Virtual)	*April 2023*
CMStatistics 2022 - 15th International Conference of the ERCIM WG on Computational and Methodological Statistics London, UK (Virtual)	*December 2022*
IFCS 2022 - 17th Conference of the IFCS Porto, Portugal	*July 2022*
EcoSta 2022 - 5th International Conference on Econometrics and Statistics Kyoto, Japan (Virtual)	*June 2022*

Seminar series "Introduction to Statistics"	*February 2022*
Hospitality Management - Federico II University of Naples (Virtual)	
CLADAG 2021 - 13th Scientific Meeting of Classification and Data Analysis Group	*September 2021*
Florence, Italy (Virtual)	
ISI 2021 - 63rd International Statistical Institute World Statistics Congress "Statistics and Data Science for a Better World"	*July 2021*
Virtual conference	
EconJobMarket	*December 2019*
Rotterdam, Netherlands	
ASA 2019 Scientific Conference on Statistics for Healt and Well-Being	*September 2019*
Brescia, Italy	
CLADAG 2019 - 12th Scientific Meeting of Classification and Data Analysis Group	*September 2019*
Cassino, Italy	
SIS 2018 - 49th Scientific meeting of the Italian Statistical Society	*June 2018*
Palermo, Italy	
Workshop on "Selection and Synthesis of Indicators for Sustainable Development Goals: Methodologies and Applications"	*October 2017*
Rome, Italy	

SUPERVISION

BSc Honours Class thesis (Arianna Giuffra and Beatriz Polak)	*2025 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
International Bachelor Economics and Business Economics	
Research Internship (Leon Czarnecki)	*2025 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
Research MSc Business Data Science	
PhD (Irene Ariante)	*2025 - Present*
Department of Economics, Management and Institutions, University of Naples Federico II, Naples	
Statistics and Management	
PhD (Marten Soer)	*2024 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
Econometrics and Operation Research	
Research Internship (Aleksandr Zhuravlev)	*2024 - 2025*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
Research MSc Business Data Science	
MSc theses (2)	*2021 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
MSc Econometrics and Management Science, Econometrics	
MSc theses (15)	*2021 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
MSc Econometrics and Management Science, Business Analytics and Quantitative Marketing	
MSc theses (18)	*2021 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
MSc Economics and Business, Data Science and Marketing Analytics	
BSc theses (33)	*2020 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam	
BSc Econometrics and Operational Research	

TEACHING AS COORDINATOR OR LECTURER

Applied Statistics 2   *2022 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam
BSc Economics and Business Economics

Toegepaste Statistiek 2   *2022 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam
BSc Economics and Business Economics

Seminar Case Studies in Business Analytics and Quantitative Marketing   *2022 - Present*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam
MSc Econometrics and Management Science, Business Analytics and Quantitative Marketing

Seminar in Business Analytics and Quantitative Marketing   *2021*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam
BSc Econometrics and Operational Research

Seminar Data Science for Marketing Analytics   *2020 - 2022*
Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam
MSc Economics and Business, Data Science and Marketing Analytics **Statistics**   *2019*
School of Economics, Tor Vergata University of Rome, Rome
Master of Science in European Economy and Business Law

EDITORIAL SERVICES

Associate editor of "ISI Magazine"   *2025 - Present*
Co-guest-editor of the special issue "Theoretical and Computational Advances in Classification, Clustering, Pattern Recognition and Data Analysis " in METRON   *2025*
Associate editor of "Statistica Applicata – The Italian Journal of Applied Statistics"   *2025 - Present*
Article Editor for Sage Open   *2024 - Present*
Co-guest-editor of the special issue "Advances in statistical modelling, methods and applications" in METRON   *2022*
Co-editor of "Book of Short Papers of SIS 2022"   *2022*
Reviewer for a number of scientific journals in Statistics   *2018 - Present*
– in alphabetic order – Advances in Data Analysis and Classification; Annals of Operations Research; Behaviormetrika; BMC Psychology; Computational Statistics; Computational Statistics and Data Analysis; Educational and Psychological Measurement; International Journal of Data Science and Analytics; Journal of Classification; Journal of Computational Social Science; Journal of Data Science, Statistics and Visualisation; Journal of Infrastructure, Policy and Development; Journal of Statistical Computation and Simulation; Journal of the Royal Statistical Society Series B; METRON; Operational Research; PLOS ONE; SAGE Open; Scientific Reports; SN Business & Economics; Socio-Economic Planning Sciences; SoftwareX; Statistica; Statistical Methods and Applications; Statistics and Computing

ACADEMIC SERVICES

Member of the scientific programme committee of the 5th ISI Regional Statistical Conference   *2026*
Organizer of an invited session of CLADAG-VOC 2025   *2025*
Organizer of an invited session of IES 2025   *2025*
Member of the scientific programme committee of CLADAG-VOC 2025   *2025*
Member of the scientific programme committee of IES 2025   *2025*
IASC data analysis competition officer   *2023-2025*
Member of the committee of IASC data analysis competition   *2023*
Organizer of an invited session of CLADAG 2023   *2023*
Member of the scientific programme committee of CLADAG 2023   *2023*

Member of the scientific programme committee of IES 2023	*2023*
Organizer of an invited session of SIS 2023	*2023*
Responsible for the "Sustainability" topic within SVQS	*2022 - Present*
Organizer of an invited session of CMStatistics 2022	*2022*
Co-organizer for the Econometrics internal seminars at Econometric Institute, Erasmus University Rotterdam	*2022 - Present*
Organizer of an invited session of ECDA 2022	*2022*
Member of the scientific programme committee of HackTheGene 2022	*2022*
Member of the committee of the prize "Premio TStat Training"	*2022*
National coordinator of y-SIS	*2022*
Member of the scientific programme committee of SIS 2022	*2022*
Member of the scientific programme committee of IES 2022	*2022*
Member of the national board of y-SIS	*2021 - 2022*
Member of the organizing committee of DSSV-ECDA 2021	*2021*
Member of the organizing committee of DSSV 2020	*2020*
Member of the admission committee of II level master: "Quantitative methods and models for decision support", University of Rome UnitelmaSapienza	*2020*
Organizer of an invited session of SIS 2020	*2020*

MEMBERSHIPS

International Statistical Institute (ISI - Elected member)	*2025*
Multi-dimensional Data Visualisation (MuViSU)	*2025*
Erasmus Research Institute of Management (ERIM - Associate member)	*2023*
Vereniging voor Ordinatie en Classificatie (VOC)	*2022*
International Association Statistical Computing (IASC)	*2020*
Statistica per la Valutazione e la Qualità nei Servizi (SVQS)	*2019*
Classification and Data Analysis Group (CLADAG)	*2019*
young SIS (y-SIS)	*2016*
Società Italiana di Statistica - Italian Statistical Society (SIS)	*2016*

WORK EXPERIENCES

Consultant as Lead Statistician *October - December 2019*
Project: *Survey in Zanzibar on community socio-economic conditions*, ARS Progetti S.P.A., Rome

Consultant as Supervisor *July - October 2019*
Project: *Survey in Zanzibar on environmental cleanliness, public service perception and tourism competitiveness*, NGO Fondazione ACRA, Rome

Consultant as Lead Statistician *June - August 2018*
Project: *Survey within the framework of the "Consultancy Services to support community engagement and awareness within the Urban Municipal Council"*, NGO Fondazione ACRA, Zanzibar, Tanzania

LANGUAGES

Italian	Native language
English	Speaking: C1 Writing: C2

EXTRA-CURRICULAR

- President and Co-Founder "ASD Valcanneto Futsal" (Cerveteri, 2018 - 2021)
- Attended the 1st International Summer School on Classification and Data Analysis (Rimini, 2017)
- Attended a Erasmus semester at University College of Dublin (Dublin, 2012)