

**UNIVERSITY OF MILAN**

Selection procedure for recruiting full professors under art.18, paragraph 1 and 4, of Law No.240/2010 for competition sector 13/D1 - Statistics, (scientific-disciplinary sector: SECS-S/01 - Statistics) at the Department of Economics, Management and Quantitative Methods \_\_, (announcement published in Official Gazette No. 93 of 05/12/2023) - Competition code 5428

## **FRANCESCA GRESELIN**

### **CURRICULUM VITAE**

(N.B. CV MUST BE OF UP TO 30 PAGES AND INCLUDE THE DETAILS CANDIDATES CONSIDER USEFUL FOR THE ASSESSMENT.

ALL THE TITLES INSERTED BELOW ARE JUST EXAMPLES THAT CAN BE REPLACED, CHANGED OR COMPLETED)

#### **PERSONAL DATA (DO NOT INCLUDE YOUR PERSONAL ADDRESS AND LANDLINE OR MOBILE PHONE NUMBER)**

<b>SURNAME</b>	<b>GRESELIN</b>
<b>NAME</b>	<b>FRANCESCA MARIA PAOLA</b>
<b>DATE OF BIRTH</b>	<b>30 JUNE 1959</b>

#### **QUALIFICATIONS**

##### **DEGREE**

(Specify full degree name, University, date, etc.)

Laurea in Matematica, University of Trento, January 18, 1982

##### **FURTHER QUALIFICATIONS**

(Specify qualification full name, institution, date, etc.)

2019, National Full Professor Qualification in Statistics (Abilitazione Scientifica Nazionale 2016, idoneità I<sup>a</sup> fascia, settore 13/D1 - Statistica).

#### **TEACHING ACTIVITIES**

##### **CLASSES AND MODULES**

(Specify academic year, degree course, hours of frontal instruction, No. of credits, if any)

- [2022-now] Advanced Foundations of Statistics for Artificial Intelligence within the Master's degree program in Artificial Intelligence for Science and Technology, jointly organized by the University of Milano-Bicocca, the University of Milan, and the University of Pavia, 32 hours, 6 credits
- [2020-now] Statistical Modeling, PhD lectures, Univ. Milano-Bicocca, 12 hours
- [2021] Modelos de Mixturas, con aplicaciones en R (International Specialization course), organized by the Universidad Nacional de San Agustín, Facultad de Ciencias Naturales y Formales, Departamento Académico de Estadística, Arequipa (Peru) 17--28, May 2021 (20 hours on-line; with Andrea Cappozzo, for lab sessions)
- [2014-2019] Statistical Inference, PhD lectures, Univ. Milano-Bicocca, 12 hours
- [2015-2016] Risk analysis, graduate course, Univ. Milano-Bicocca, 21 hours, 3 credits
- [2016-now] Statistics for Insurance, graduate course, Univ. Milano-Bicocca, 21 hours, 3 credits

- [2016] Teaching Mobility: Inequality Measures and their properties, at the Department of Statistical Methods, University of Lodz, Lodz (Poland), 8 hours
- [2015] Teaching Mobility: Inequality Measures and their properties: a comparison, at Laboratoire Paul Painlevé, University of Lille 1, Lille (France), 8 hours
- [2014] Teaching Mobility: Mixturas robustas de anàlisis factoriales, at GIR de Probabilidad y Estadística Matemàtica, University of Valladolid, Valladolid (Spain), 8 hours
- [2005-2013] Random variables and their transformations, PhD lectures, Univ. Milano-Bicocca, 12 hours
- [2008] Mixture Models in R, PhD lectures in Computational Statistics, organized by the University Consortium Nova Universitas at Macerata University, Macerata, Italy, 12 hours
- [1998-2005] Computational Statistics, PhD lectures, Univ. Milano-Bicocca, 12 hours
- [2001-now] Statistics for Finance, undergraduate course, Univ. Milano-Bicocca, 56 hours, 8 credits
- [2009-2012] Statistical Inference, undergraduate course, Univ. Milano-Bicocca, 21 hours, 3 credits
- [1999-2022] Statistics, undergraduate course, Univ. Milano-Bicocca, 64 hours, 9 credits
- [1996-2010] Computational Statistics, postgraduate course, Univ. Milano-Bicocca, 48 hours, 7 credits
- [1986-1987] Programming Languages, undergraduate course, Univ. Asunción (Paraguay), 48 hours
- [1987-1989] Compilers, undergraduate course, Univ. Asunción (Paraguay), 48 hours
- [1988-1990] Artificial Intelligence, graduate course, Univ. Asunción (Paraguay), 24 hours
- [1989-1991] Software Engineering, graduate course, Univ. Asunción (Paraguay), 24 hours

## **COMPLEMENTARY TEACHING ACTIVITIES AND SERVICE ACTIVITIES TO STUDENTS**

### **MENTORING BACHELOR'S DEGREE, MASTER'S DEGREE, PhD, AND SPECIALISATION SCHOOL DISSERTATIONS AND THESES**

*(Specify academic year, University, degree course, etc.)*

- [2022-now, Giorgia Zaccaria, Post-Doc project: Advances in robust learning from multidimensional and complex data, and their applications.
- [2022-now, Tamara Vasiljev, Ph.D. thesis: T.B.A.
- [2022-now, Muhammad Amir Saeed, Ph.D. thesis: T.B.A.
- [2020-2021], Andrea Cappozzo, Post-Doc project: Robust adaptive model-based semi-supervised classification: advances in learning from shifted data.
- [2019-now], Fabio Piacenza, Ph.D. thesis: Holistic Approach to Operational Risk: Issues, Solutions, and Decision Making.
- [2018-2022], Anna Comotti, Ph.D. thesis: Assessing psychometric scales through IRT-based modelling, with applications to Covid-19 data.
- [2017-2020], Andrea Cappozzo, Ph.D. thesis: Robust model-based classification and clustering: advances in learning from contaminated datasets.
- [2015] Ankit Jain, internship student from IIT Kanpur (India), Research project: An R package for the Zenga inequality measure.
- [2014] Anu Khandwal, internship student from IIT Kanpur (India), Research project: Measuring inequality in U.S. cities at the time of the great divergence.
- [2006-2009], Cinzia D'Ariano, Ph.D. thesis: Inferential approaches to a new inequality measure.
- [2003-2006], Leo Pasquazzi, Ph.D. thesis: Asymptotic and Non-Parametric Confidence Intervals for the Gini's inequality measure.
- Approximately 70 among master thesis and bachelor thesis, from 2003 onwards

### **TUTORING BACHELOR'S DEGREE, MASTER'S DEGREE, AND PhD STUDENTS**

*(Specify academic year, degree course, etc.)*

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### **SEMINARS**

*(Specify seminar title, place, date, etc.)*

- 2023-11-23 Seminar at GIR de Probabilidad y Estadística Matemàtica, University of Valladolid, Valladolid (Spain). Title of the talk: Measuring income inequality via percentile relativities.

- 2021-03-12 Research Webinar “Dialogues on Gender. ABCD Research Seminars, University of Milano-Bicocca”, Milan (Italy). Title of the talk: Analyzing the Gender Gap in Poland and Italy, and by Regions.
- 2018-10-25 Statistics Seminars 2018-19, Department of Mathematics, University College Dublin, Dublin (Ireland). Title of the talk: Exploring robust fuzzy clustering of multivariate skew data.
- 2016-2-2 Seminar at Department of Mathematics, University of Queensland, Brisbane (Australia). Title of the talk: The joint usage of trimming and constraints for robust estimation of mixtures of factor analyzers.
- 2016-11-15 Seminar at the Department of Statistical Methods, University of Lodz, Lodz (Poland). Title of the talks: Inequality Measures and their properties.
- 2015-11-18 Seminar at Laboratoire Paul Painlevé, University of Lille 1, Lille (France). Title of the talks: From Gini to Zenga: In Search of a More Equitable Measurement of Income Inequality.
- 2014-2-24 Seminar at GIR de Probabilidad y Estadística Matemática, University of Valladolid, Valladolid (Spain). Title of the talk: Los clientes de telecomunicaciones se comportan de manera similar dentro de un mismo plan de tráfico? Segmentación del mercado a través de mixturas restringidas de análisis factoriales
- 2011-10-7 Seminar at Department of Mathematics & Statistics, University of Guelph, Guelph (Canada). Title of the talk: From Gini to Zenga: In Search of a More Equitable Measurement of Income Inequality
- 2011-9-30 Seminar at Department of Sociology, University of Western Ontario, London (Canada). Title of the talk: From Gini to Zenga: the development of a new way for assessing income inequality.
- 2011-9-22 Seminar at Department of Statistical and Actuarial Sciences, University of Western Ontario, London (Canada). Title of the talk: What do Gini and Zenga say about European household incomes?
- 2011-9-15 Seminar at Department of Economics, Carleton University, Ottawa (Canada). Title of the talk: What do Gini and Zenga say about European household incomes?
- 2011-7-6 Seminar at Dipartimento di Impresa Culture e Società, Università di Catania, Catania (Italy). Title of the talk: Estimating Gini's and Zenga's inequality indices on the ECHP dataset.

## **SCIENTIFIC RESEARCH ACTIVITIES**

### **SCIENTIFIC PUBLICATIONS**

*(For each publication, specify the following: authors' names, full title, publisher, date and place of publication, ISBN/ISSN/DOI or equivalent code)*

#### **Publications in Scientific Journals**

1. Di Vincenzo D., Greselin F., Piacenza F., Zitakis R., 2023, A text analysis for Operational Risk loss descriptions, The Journal of Operational Risk, 18(3), 63-90. (DOI: 10.21314/JOP.2023.003)
2. Greselin F., Jedrzejczak A., Trzcińska K., 2023, A new parametric approach to Gender Gap, with application to EUSILC data in Poland and Italy, Statistical Analysis and Data Mining: The ASA Data Science Journal, 16(4), 319-335. (DOI: 10.1002/sam.11623, SCOPUS 2-s2.0-85159179571, WOS:000988628800001)
3. Comotti A., Fattori A., Greselin F., Bordini L., Brambilla P., Bonzini M., 2023, Psychometric Evaluation of GHQ-12 as a Screening Tool for Psychological Impairment of Healthcare Workers Facing COVID-19 Pandemic. La Medicina del Lavoro | Work, Environment and Health, 114, 1. (DOI:10.23749/mdl.v114i1.13918, SCOPUS 2-s2.0-85148249844, WOS:000992581500001)
4. Cappozzo A., García-Escudero, L.A., Greselin, F., Mayo-Isacar, A., 2022, Graphical and computational tools to guide parameter choice for the cluster weighted robust model, Journal of Computational and Graphical Statistics, 32:3, 1195-1214. (DOI:10.1080/10618600.2022.2154218, SCOPUS 2-s2.0-85146723152, WOS:000909539200001)
5. Denti F., Cappozzo A., and Greselin F., 2021, A Two-Stage Bayesian Nonparametric Model for Novelty Detection with Robust Prior Information, Statistics and Computing, 31, 42. (DOI:10.1007/s11222-021-10017, SCOPUS 2-s2.0-85106872286, WOS:000654258400001)
6. Cappozzo, A., Duponchel, L., Greselin, F., Murphy, B., 2021, Robust variable selection in the framework of classification with label noise and outliers: applications to spectroscopic data in agri-food, Analytica Chimica Acta, 1153, 338245. (DOI:10.1016/j.aca.2021.338245, SCOPUS 2-s2.0-85101658998, WOS:000635606500001)
7. Cappozzo, A.; García-Escudero, L.A.; Greselin, F.; Mayo-Isacar, A., 2021, Parameter Choice, Stability and Validity for Robust Cluster Weighted Modeling, Stats, 4, 602- 615. (DOI: 10.3390/stats4030036, WOS:000836811900001)
8. Cappozzo, A., Greselin, F., Murphy, B., 2021, Robust variable selection for model-based learning in presence of adulteration, Computational Statistics and Data Analysis, 158, 107186. (DOI: 10.1016/j.csda.2021.107186, SCOPUS 2-s2.0-85100533727, WOS:000632325800001)

9. Greselin, F., Murphy, B., Porzio, G.C., Vistocco, D., 2021, CLADAG 2019 Special Issue: Selected Papers on Classification and Data Analysis, *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 14 (4), 295-296.  
(DOI: 10.1002/sam.11533, SCOPUS 2-s2.0-85108120914, WOS:000662050900001)
10. Davydov Y., Greselin F., 2020, Inferential results for a new inequality curve, *Mathematical Methods of Statistics*, 30 (1-2), 1-15  
(DOI 10.3103/S1066530721010026, SCOPUS 2-s2.0-85130961820, WOS:000805587900001)
11. Greselin F., Jedrzejczak A., 2020, Analyzing the Gender Gap in Poland and Italy, and by Regions, *International Advances in Economic Research*, 26, 433-447.  
(DOI:10.1007/s11294-020-09810-3; SCOPUS 2-s2.0-85097179407, WOS:000599028500001)
12. Greselin F., Pellegrino S., Vernizzi A., 2020, The Zenga Equality curve: a new approach to measuring tax redistribution and progressivity, *The Review of Income and Wealth*, 67(4): 950-976.  
(DOI: 10.1111/roiw.12493, SCOPUS 2-s2.0-85097763098, WOS:000600003300001)
13. Cappozzo A., Greselin F., Murphy B., 2020, Anomaly and Novelty detection for robust semi-supervised learning, *Statistics and Computing*, 30, 1545-1571.  
(DOI:10.1007/s11222-020-09959-1; SCOPUS 2-s2.0-85087416358, WOS:000544527600001)
14. Cappozzo, A., Greselin, F., Murphy, B., 2020, A robust approach to model-based classification based on trimming and constraints, *Advances in Data Analysis and Classification*, 14, 327-354 (DOI:10.1007/s11634-019-00371-w; SCOPUS 2-s2.0-85070929493, WOS:000544712900005)
15. Davydov Y., Greselin F., 2020, Comparisons between poorest and richest to measure inequality, *Sociological Methods and Research*, 49, 2, 526-561.  
(DOI: 10.1177/0049124117747300; SCOPUS s2.0-85081389009; WOS:000526381000008)
16. Greselin, F., Piacenza, F., Zitakis, R., 2019, Practice Oriented and Monte Carlo Based Estimation of the Value-at-Risk for Operational Risk Measurement, *Risks*, 7(2):50  
(DOI: 10.3390/risks7020050, SCOPUS 2-s2.0-85066936679, WOS:000474937700016)
17. Davydov Y., Greselin F., 2019, Inferential results for a new measure of inequality, *The Econometrics Journal*, 22(2), 153-172  
(DOI: 10.1093/ectj/utz004, SCOPUS s2.0-85076514370, WOS:000493351000004)
18. García-Escudero L.A., Greselin F., Mayo-Isacar A., 2018, Robust fuzzy and parsimonious clustering based on mixtures of Factor Analyzers, *International Journal of Approximate Reasoning*, 94, 60-75,  
(DOI:10.1016/j.ijar.2018.01.001; SCOPUS 2-s2.0-85041456836; WOS:000426330500005)
19. Greselin F., Zitakis R., 2018, From the classical Gini index of income inequality to a new Zenga-type relative measure of risk: a modeller's perspective, *Econometrics*, 6, 4, (DOI:10.3390/econometrics6010004; SCOPUS s2.0-85056784458; WOS:000441896200003)
20. García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isacar A., 2018, Eigenvalues and constraints in mixture modeling: geometric and computational issues, *Advances in Data Analysis and Classification*, 94, 60-75.  
(DOI: 10.1007/s11634-017-0293-y; SCOPUS s2.0-85031941854; WOS:000439171100003)
21. Giudici, P., Greselin, F., Murphy, B. and Rampichini, C., 2017, CLADAG 2015 special issue: Selected papers on classification and data analysis. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 10: 5.  
(DOI:10.1002/sam.11340; SCOPUS 2-s2.0-85010902677; WOS:000393981800001)
22. García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isacar A., 2017, Robust estimation of mixtures of regressions with random covariates, via trimming and constraints, *Statistics and Computing*, 27, 2, 377-402.  
(DOI 10.1007/s11222-016-9628-3; SCOPUS 2-s2.0-84957579574; WOS:000395004300006)
23. García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isacar A., 2016, The joint role of trimming and constraints in robust estimation of Gaussian factor analyzers, *Computational Statistics and Data Analysis*, 99, 131-147.  
(DOI: 10.1016/j.csda.2016.01.005; SCOPUS 2-s2.0-84958177299; WOS:000373653700011)
24. Greselin F., Ingrassia S., 2015, Maximum likelihood estimation in constrained parameter spaces for mixtures of Factor Analyzers, *Statistics and Computing*, 25, 2, 215-226.  
(DOI: 10.1007/s11222-013-9427-z; SCOPUS 2-s2.0-84886955202; WOS:000349551100004)
25. Greselin F., Pasquazzi L., 2015, Parametric vs non-parametric inference on Zenga index of inequality: issues and evidence from survey data, *Communications in Statistics - Simulation and Computation*, 44, 1702-1719.  
(DOI: 10.1080/03610918.2013.824585; SCOPUS 2-s2.0-84926386661; WOS:000352721400005)
26. Greselin F., 2014, More equal and poorer, or richer but more unequal?, *Economic Quality Control*, 29, 2, 99-117.(DOI: 10.1515/eqc-2014-0011)
27. Greselin F., Pasquazzi L., Zitakis R., 2014, Heavy tailed capital incomes: Zenga index, statistical inference, and ECHP data analysis, *Extremes*, 17, 1, 127-155.  
(DOI: 10.1007/s10687-013-0177-2; SCOPUS 2-s2.0-84896543045, WOS:000333122900006)
28. Bagnato L., Greselin F., Punzo A., 2014, On the Spectral Decomposition in Normal Discriminant Analysis, *Communications in Statistics - Simulation and Computation*, 43, 6, 1471-1489.  
(DOI: 10.1080/03610918.2012.735318; SCOPUS 2-s2.0-84893098424; WOS:000330106100012)
29. Greselin F., Punzo A., 2013, Closed Likelihood-Ratio Testing Procedures to Assess Similarity of Covariance Matrices, *The American Statistician*, 67, 3, 117-128. (DOI:10.1080/00031305.2013.791643; SCOPUS 2-s2.0-84890187858; WOS:000325911700001)

30. Greselin F., Pasquazzi L., Zitakis R., 2012, Contrasting the Gini and Zenga indices of economic inequality, *Journal of Applied Statistics*, 40, 2, 282-297. (DOI: 10.1080/02664763.2012.740627; SCOPUS 2-s2.0-84871221317; WOS:000312341300004)
31. Fattore M., Maggino F., Greselin F., 2011, Socio-economic evaluation with ordinal variables: integrating counting and poset approaches, *Statistics & Applications, Special Issue: Partial Orders in Applied Sciences*, 31-42.
32. Greselin F., Ingrassia S., Punzo A., 2011, Assessing the pattern of covariance matrices via an augmentation multiple testing procedure, *Statistical Methods and Applications*, 20, 2, 141-170. (DOI: 10.1007/s10260-010-0157-5; SCOPUS 2-s2.0-79957957239; WOS:000291173000002)
33. Greselin F., Pasquazzi L., Zitakis R., 2010, Zenga's new index of economic inequality, its estimation, and an analysis of incomes in Italy, *Journal of Probability and Statistics*, 26 pp. (DOI:10.1155/2010/718905; SCOPUS 2-s2.0-84859192884; WOS: 12153779)
34. Greselin F., Ingrassia S., 2010, Constrained monotone EM algorithms for mixtures of multivariate t-distributions, *Statistics and Computing*, 20, 1, 9-22. (DOI: 10.1007/s11222-008-9112-9; SCOPUS 2-s2.0-73549091028; WOS:000273403900002)
35. Greselin F., Puri M.L., Zitakis R., 2009, L-functions, processes, and statistics in measuring economic inequality and actuarial risks, *Statistics and Its Interface*, 2, 227-245. (DOI:10.4310/SII.2009.v2.n2.a13; WOS:000282649700014)
36. Greselin F., Pasquazzi L., 2009, Asymptotic Confidence Intervals for a New Inequality Measure, *Communications in Statistics - Simulation and Computation*, 38, 8, 1742-1756. (DOI: 10.1080/03610910903121974; SCOPUS 2-s2.0-70449626294; WOS:000270912500013)
37. Greselin F., Pasquazzi L., 2008, Minimum sample sizes in asymptotic confidence intervals for Gini's inequality measure, *Statistics & Applications*, 6, 2, 99-116. (DOI: 10.1400/209607; SCOPUS 2-s2.0-85018266169)
38. Greselin F., Maffellini W., 2007, Minimum sample sizes for confidence intervals for Gini's mean difference: a new approach for their determination, *Statistics & Applications*, 5, 1, 103-122. (DOI: 10.1400/209579; SCOPUS 2-s2.0-85087416358)
39. Greselin F., Zenga M., 2006, Convergence of the Sample Mean Difference to the normal distribution: simulation results, *Statistics & Applications*, 4, 1, 97-120. (SCOPUS 2-s2.0-85100784906)
40. Greselin F., 2006, Dependence measures based on partial and total orderings, *Statistics & Applications*, 4, 2, 3-25. (SCOPUS 2-s2.0-8508712417)
41. Greselin F., Zenga M., Poliscchio M., 2004, The variance of Gini's mean difference and its estimators, *Statistica*, 3, 455-475.
42. Greselin F., Zenga M., 2004, A partial ordering of dependence for contingency tables, *Statistics & Applications*, 2, 53-71. (SCOPUS 2-s2.0-85087116867)
43. Greselin F., Zenga M., 2004, Partial and total orderings of dependence on tables with given margins, *Quaderni di Statistica*, 6, 129-155.
44. Greselin F., 2003, Counting and enumerating frequency tables with given margins, *Statistics & Applications*, 1, 2, 87-104. (SCOPUS2-s2.0-79952799111)
45. Greselin F., 1997, Valutazione approssimata della distorsione dello stimatore  $R^{\wedge}$  nella distribuzione di Pareto, *Quaderni di Statistica e Matematica Applicata alle Scienze Economico-Sociali*, 19, 3, 269-279.
46. Bellassai, G., Cernuzzi, L., Greselin, F., 1993, Teaching software engineering for the development of Paraguay, In: *Software Engineering Education*. Elsevier, 129-134. (SCOPUS: 2-s2.0-0027755522, WOS:A1993BZ97G00015)

#### Books, Editorship and Curatorships

47. Cazzaro M., Greselin F., *Modelli statistici per l'analisi economica e finanziaria*. with Mylab platform, eText and online updates, 138 pages, Pearson Italy - Milano, ISBN 9788891903419
48. Greselin F., Mola F., Zenga Ma. Editors, *Cladag 2017 Book of Short Papers*, eBook, Universitas Studiorum, ISBN: 978-88-99459-71-0
49. Greselin F., Deldossi L., Bagnato L., and Vichi M. Editors, *Statistical Learning of Complex Data*, Springer Series Studies in Classification, Data Analysis, and Knowledge Organization, ISBN 978-3-030-21140-0
50. Porzio G.C., Greselin F., and Balzano S. Editors, *Book of Short Papers Cladag 2019*, eBook, Universitas Studiorum, ISBN 978-88-8317-108-6

#### Publications in volumes with ISBN

51. Greselin F. and Zaccaria G., 2023, Handling missing data in complex phenomena: an ultrametric model-based approach for clustering, pp 961-966, in *Book of short papers - SIS 2023*, Pearson, ISBN: 9788891935618.
52. Cappozzo A., García-Escudero L.A., Greselin F., Mayo-Isar A., 2022, Monitoring Tools in Robust CWM for the Analysis of Crime Data, in *Building Bridges between Soft and Statistical Methodologies for Data Science*, vol. 1433 of the Springer series *Advances in Intelligent Systems and Computing*, Springer, DOI:10.1007/978-3-031-15509-3, ISBN: 978-3-031-15508-6

53. Denti F., Cappozzo A., Greselin F., 2022, Outlier and Novelty Detection for Functional Data: a Semiparametric Bayesian Approach, pp. 42, in *Classification and Data Science in the Digital Age - Book of Abstracts IFCS 2022*, Printed by Instituto Nacional de Estadística, ISBN: 978-989-98955-9-1
54. Cappozzo A., García-Escudero L.A., Greselin F., Mayo-Isicar A., 2022, Monitoring Hyperparameter Choice for Robust Cluster Weighted Model, pp. 105, in *Classification and Data Science in the Digital Age - Book of Abstracts IFCS 2022*, Printed by Instituto Nacional de Estadística, ISBN: 978-989-98955-9-1
55. Comotti A. and Greselin F., 2022, Robustifying the Rasch model with the forward search, in *SIS2022 Book of the Short Papers*, Balzanella A., Bini M., Cavicchia C. and Verde R. Editors, pp.1693-1698, Pearson Ed., ISBN: 9788891932310
56. Cappozzo A., García-Escudero L.A., Greselin F., Mayo-Isicar A., 2021, Exploring solutions via monitoring for cluster-weighted robust models, in *ClaDAG 2021 Book of Abstracts and Short papers*, Firenze University Press, 2021, G.C.Porzio, C. Rampichini, and C. Bocci Editors, pp. 284-287, doi:10.36253/978-88-5518-340-6, e-ISBN: 978-88-5518-340-6
57. Greselin F. and Jedrzejczak A., 2021, Quantifying the impact of covariates on the gender gap measurement: an analysis based on EU-SILC data from Poland and Italy, in *ClaDAG 2021 Book of Abstracts and Short papers*, Firenze University Press, 2021, G.C.Porzio, C. Rampichini, and C. Bocci Editors, pp. 108-111, doi:10.36253/978-88-5518-340-6, e-ISBN: 978-88-5518-340-6
58. Cappozzo A., Duponchel L., Greselin F., Murphy T., 2021, Robust classification of spectroscopic data in agri-food: first analysis on the stability of results, in *ClaDAG 2021 Book of Abstracts and Short papers*, Firenze University Press, 2021, G.C.Porzio, C. Rampichini, and C. Bocci Editors, pp. 49-52, doi:10.36253/978-88-5518-340-6, e-ISBN: 978-88-5518-340-6
59. Denti F., Cappozzo A., and Greselin F., 2021, Outlier and novelty detection for Functional data: a semi-parametric Bayesian approach, in *Short Papers in Models and Learning in Clustering and Classification*, S. Ingrassia, A. Punzo, R. Rocci Editors, pp. 33-38, LEDIpublishing, ISBN: 9788855265393.
60. Cappozzo A., and Greselin F., 2021, Monitoring tools for Cluster Weighted Robust Models, in *Short papers SIS 2021*, Pearson Eds., 2021, pp. 1245-1250, C. Perna, N. Salvati and F. Schirripa Spagnolo Editors, ISBN 9788891927361
61. Cappozzo A., Greselin F., and Murphy B., 2021, Robust Model-Based Learning to Discover New Wheat Varieties and Discriminate Adulterated Kernels in X-Ray Images in *Statistical Learning and Modeling in Data Analysis* Springer Berlin Heidelberg, 2021, pp. 29-36. Springer Series "Studies in Classification, Data Analysis, and Knowledge Organization", S. Balzano, G.C. Porzio, R. Salvatore, D. Vistocco, M. Vichi Editors, ISBN: 978-303069943-7
62. Denti F., Cappozzo A., and Greselin F., 2020, Bayesian nonparametric adaptive classification with robust prior information, in *Book of short Papers SIS 2020*, Milan: Pearson, 2020, pp. 655-660, A. Pollice, N. Salvati and F. Schirripa Spagnolo Editors, ISBN 9788891910776
63. Cappozzo A., Greselin F., and Murphy B., 2020, Variable selection for robust model-based learning from contaminated data, in *Book of short Papers SIS 2020*, Milan: Pearson, 2020, pp. 1117-1120, A. Pollice, N. Salvati and F. Schirripa Spagnolo Editors, ISBN: 9788891910776
64. Cappozzo, A., Greselin F., and Murphy B., 2019, Supervised learning in presence of outliers, label noise and unobserved classes. in: *Book of short papers | Cladag2019*, Centro Editoriale di Ateneo Università di Cassino e del Lazio Meridionale, pp. 104-107, ISBN: 978-88-8317-108-6
65. Cappozzo, A., Greselin F., Manzi G., 2019, Predicting and improving smart mobility: a robust model-based approach to the BikeMi BSS. in: *Smart Statistics for Smart Applications 2019 - Book of Short papers*, Milan, Pearson, pp. 737-742, ISBN 9788891915108
66. Cappozzo, A., and Greselin F., 2019, Detecting wine adulterations employing robust mixture of factor analyzers. In: *Statistical Learning of Complex Data*. Springer Berlin Heidelberg, pp. 13-21. Springer Series Studies in Classification, Data Analysis, and Knowledge Organization, ISBN 978-3-030-21140-0 (SCOPUS 2-s2.0-85072854538)
67. García-Escudero L.A., Greselin F., Mayo-Isicar A., 2018, Extending robust fuzzy clustering to skew data, *CFE-CMStatistics 2018 Book of Abstracts*, p. 26, London. Technical Editors: Ana Colubi, Erricos J. Kontoghiorghes and Herman K. Van Dijk, 2018, ISBN 978-9963-2227-5-9.
68. Cappozzo, A., Greselin F., Murphy T., 2018, The role of trimming and variable selection in robust model-based classification for food authenticity studies. In *COMPSTAT 2018 Book of Abstracts*, p. 35, *COMPSTAT 2018 and CRoNoS FDA 2018*, Ana Colubi and Cristian Gatu Editors, ISBN 978-9963-2227-3-5.
69. García-Escudero L.A., Greselin F., Mayo-Isicar A., 2018, Fuzzy clustering of multivariate skew data. In *COMPSTAT 2018 Book of Abstracts*, p. 33, Ana Colubi and Cristian Gatu Editors, ISBN 978-9963-2227-3-5
70. Cappozzo A., Greselin F., Murphy T., 2018, Robust Updating Classification Rule with applications in Food Authenticity Studies, in A. Abbruzzo, E. Brentari, M. Chiodi, & D. Piacentino (a cura di), *Book of short Papers SIS 2018*, Pearson, ISBN 9788891910233.
71. García-Escudero L.A., Greselin F., Agustin Mayo-Isicar A., McLachlan G., 2017, Advances in robust estimation of skew normal mixtures. *CFE-CMStatistics 2017 Book of Abstracts*, p. 120, London. Technical Editors: Gil Gonzalez-Rodriguez and Marc Hofmann, 2017, ISBN 978-9963-2227-4-2.
72. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isicar A., 2017, To get the best, tame the beast: constrained ML estimation for mixture models. *Book of abstracts for the "III International Workshop on Proximity Data, Multivariate Analysis and Classification"*, 2017, ISBN 978-84-697-7418-2
73. García-Escudero L., Gordaliza A., Greselin F., Mayo-Isicar A., 2018, Robust approaches for fuzzy clusterwise regression based on trimming and constraints, in *The Mathematics of the Uncertain: A Tribute to Pedro*

- Gil, Eduardo Gil, Eva Gil, Juan Gil and Maria Angeles Gil Editors, Springer Series: Studies in Systems, Decision and Control, Springer International Publishing, 2017, ISBN 978-3-319-73847-5 ( SCOPUS 2-s2.0-85042905192)
74. García-Escudero L., Greselin F., Mayo-Iscar A., 2017, New proposals for clustering based on trimming and restrictions, in Cladag 2017 Book of Short Papers, Editors Francesca Greselin, Francesco Mola and Mariangela Zenga, Universitas Studiorum S.r.l., 2017, ISBN 978-88-99459-71-0.
75. Cappozzo A., Greselin F., 2017, Wine authenticity assessed via trimming, in Cladag 2017 Book of Short Papers, Editors Francesca Greselin, Francesco Mola and Mariangela Zenga, Universitas Studiorum S.r.l., ISBN 978-88-99459-71-0.
76. García-Escudero L., Greselin F., Mayo-Iscar A., 2016, Fuzzy Clustering through Robust Factor Analyzers, in Soft Methods for Data Science, Eds. M.B. Ferraro, P. Giordani, B. Vantaggi, M. Gagolewski, M. A. Gil, P. Grzegorzewski, and O. Hryniewicz, Springer International Publishing, pp. 229-235, ISBN 978-3-319-42972-4. (SCOPUS s2.0-84988422083; WOS: 000390837600029)
77. García-Escudero L., Greselin F., Mayo-Iscar A., McLachlan G., 2016, Robust estimation of mixtures of Skew Normal Distributions. Proceedings of the 48th Scientific Meeting of the Italian Statistical Society, Eds. Monica Pratesi and Cira Perna, Dipartimento di Scienze Economiche e Statistiche (publisher), Fisciano (SA, Italy), ISBN 9788861970618.
78. García-Escudero L.A, Greselin F., Agustin Mayo-Iscar A., McLachlan G., 2016, Robust estimation of mixture models with skew components via trimming and constraints. CFE-CMStatistics 2016 Book of Abstracts, p. 6, Sevilla. Technical Editors: Angela Blanco-Fernandez and Gil Gonzalez-Rodriguez, 2016, ISBN 978-9963-22271-1.
79. García-Escudero L., Greselin F., Mayo-Iscar A., A fuzzy version of robust mixtures of Gaussian factor analyzers. CFE-CMStatistics 2016 Book of Abstracts, p. 5, Sevilla. Technical Editors: Angela Blanco-Fernandez and Gil Gonzalez-Rodriguez, ISBN 978-9963-2227-1-1.
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81. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Iscar A., 2015, Robust estimation for mixtures of Gaussian factor analyzers. Proceedings of the 8th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2015), ISBN 978-9963-2227-0-4.
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83. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Iscar A., 2014, Robust model estimation, through trimming and constraints, for mixtures of Factor Analyzers. Proceedings of the 7th International Conference of the ERCIM WG on Computing & Statistics (ERCIM'14), ISBN 978-84-937822-4-5.
84. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Iscar A., 2014, An adaptive method to robustify ML estimation in Cluster Weighted Modeling. Proceedings of the 47th Scientific Meeting of the Italian Statistical Society, CUEC Eds., Cagliari (Italy), ISBN 978 88 8467 874 4.
85. Greselin F., Ingrassia S., 2013, Data-driven EM constraints for Gaussian mixtures of Factor Analyzers, Book of Abstracts, 9th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society, Cleup Eds., Modena (Italy), p. 245-248, ISBN 978 88 6787 117 9.
86. Greselin F., Ingrassia S., 2013, Market segmentation via mixtures of constrained factor analyzers. Advances in Latent Variables, Eds. Brentari E., Carpita M., Vita e Pensiero, Milan (Italy) , 8 pages, ISBN 978 88 343 2556 8.
87. Greselin F., Ingrassia S., 2012, Constrained EM algorithms for Gaussian mixtures of Factor Analyzers. Proceedings of the 5th International Conference of the ERCIM WG on Computing & Statistics (ERCIM'12), Oviedo (Spain), ISBN 978 84 937822 2 1.
88. Greselin F., Punzo A., 2012, Closed Likelihood-Ratio Testing Procedures to Assess Similarity of Covariance Matrices. Proceedings of the 46th Scientific Meeting of the Italian Statistical Society, Cleup Eds., Rome (Italy), ISBN 978 88 6129 882 8
89. Greselin F., Pasquazzi L., Zitakis R., 2012, Capital income inequality: evidences from ECHP data. Proceedings of the 46th Scientific Meeting of the Italian Statistical Society, Cleup Eds., Rome (Italy), ISBN 978 88 6129 882 8
90. Corbett B., Greselin F., Pasquazzi L., Zitakis R., Williams R., 2012, Not all measures of income inequality are equal: A comparison between the Gini and the Zenga. Proceedings of the International Interdisciplinary Conference, IISES Eds., Palermo (Italy), ISBN 978-80-905241-0-1.
91. Bagnato L., Greselin F., 2011, Model-based clustering and classification via patterned covariance analysis. Book of Short Papers of the 8th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society, ClaDAG 2011, Pavia University Press, Pavia (Italy), 4 pages, ISBN 978-88-96764-22-0.
92. Greselin F., Pasquazzi L., 2010, Dagum Confidence intervals for inequality measures. Proceedings of the 45th Scientific Meeting of the Italian Statistical Society, Cleup Eds., Padua (Italy), ISBN 978-88-6129-566-7.
93. Greselin F., Pasquazzi L., Zitakis R., 2010, Asymptotic theory for Zenga's new index of economic inequality. Proceedings of the 45th Scientific Meeting of the Italian Statistical Society, Cleup Eds., Padua (Italy), ISBN 978-88-6129-566-7.
94. Greselin F., Ingrassia S., 2010, Weakly homoscedastic constraints for mixtures of t-distributions. Advances in Data Analysis, Data Handling and Business Intelligence, A.Fink, B.Lausen, W.Seidel and A.Ultsch editors,

- Springer Berlin Heidelberg, p. 219-228, ISBN 978-364201043-9 (DOI 10.1007/978-3-642-01044-6-20, SCOPUS 2-s2.0-84879590606, WOS:000282669800020)
95. Greselin F., Ingrassia S., Punzo A., 2009, Multivariate tests for patterned covariance matrices. Book of Short Papers of Cladag 2009, CLEUP Eds., Padova (Italy), p. 529-532, ISBN 978-88-6129-406-6.
  96. Greselin F., Pasquazzi L., 2008, Asymptotic Confidence Intervals for a New Inequality Measure. Proceedings of the 44th Scientific Meeting of the Italian Statistical Society, Cleup Eds., Padua (Italy), ISBN 978-88-6129-228-4.
  97. Greselin F., Pasquazzi L., 2007, Minimum Sample Sizes in Asymptotic Confidence Intervals for Gini's Concentration Index. ISI 2007 Book of abstract, M.I. Gomes, D. Pestana, P. Silva. Eds, CEAUL INE and ISI, Lisbon (Portugal), ISBN 978-972-8859-71-8.
  98. Greselin F., 2005, New results on a partial ordering of dependence. Classification and Data Analysis, S. Zani and A. Cerioli editors, MUP ed., Parma (Italy), p. 377-380, ISBN 978-88-7847-066-8.
  99. Greselin F., Zenga M., 2002, Measures of association in the Fréchet class. Proceedings of the 41th Scientific Meeting of the Italian Statistical Society, Cleup Eds., Milan (Italy), p. 33-36, ISBN 88-7178-589-4.
  100. Greselin F., Bellassai G., Cernuzzi L., 1993, Teaching Software Engineering for the development of Paraguay. Proceedings of the IFIP WG3.4/SEARCC (SRIG on Education and Training), Hong Kong, North Holland, p. 129-134, ISBN 0-444-81597-X (SCOPUS 2-s2.0-0027755522; WOS:A1993BZ97G00015).

## ORGANISATION, SUPERVISION AND COORDINATION OF NATIONAL AND INTERNATIONAL RESEARCH CENTRES OR GROUPS, OR PARTICIPATION IN THEM

(For each entry, specify year, role, research group, etc.)

- **President of the Steering Committee of the Scientific association CLADAG** (Classification and Data Analysis group of the Italian Statistical Society), from Sept 2023 to September 2025.
- **Vice-President of CLADAG** (Classification and Data Analysis group of the Italian Statistical Society), Sept 2021 - Sept 2023

### Member of Scientific Boards

- *Member of the Scientific Program Committee* of the 41st Multivariate Statistical Analysis conference, November 6-8, 2023, Lodz, Poland.
- *Member of the Scientific Program Committee* of the 16th "Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena", May 8-11, 2023, Zakopane, Poland.
- *Member of the Scientific Program Committee* for the 10th International Conference on Soft Methods in Probability and Statistics (SMPS 2022), Valladolid (Spain), September 16-18, 2022.  
<http://smips2022.uva.es/committees/>
- *Member of the Scientific Program Committee* of the 15th "Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena", May 9-12, 2022, Zakopane, Poland, 2022.
- *Member of the Scientific Program Committee* of the 14th "Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena", May 10-13, 2021, Zakopane, Poland, 2021.
- *Member of the Scientific Program Committee* for the 10th International Conference on Soft Methods in Probability and Statistics (SMPS 2020) to be held in Valladolid, Spain, on September 16-18, 2020 (postponed due to Covid-19)
- *Member of the Scientific Committee of DIME2020*, International conference on Distributions and Inequality Measures in Economics, February, 20-21, 2020 - University of Milano - Bicocca, Italy.
- **President of the Scientific Program Committee** of the 12th International Meeting of the Classification and Data Analysis Group (of the Italian Statistical Society), Cassino (IT), 11-13 2019, <http://convegni.unica.it/cladag2015/contacts/>
- *Member of the Scientific Program Committee* of the 12th "Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena", Zakopane, Poland, May 13-16, 2019.
- *Member of the Steering Committee of CLADAG* (Classification and Data Analysis group of the Italian Statistical Society), since 2017 <http://cladag.it/about/>
- *Member of the Scientific Program Committee* of the 10th International Meeting of the Classification and Data Analysis Group (of the Italian Statistical Society), Cagliari (IT), 8-10 October 2015, <http://convegni.unica.it/cladag2015/contacts/>
- *Member of the Scientific Program Committee* for the International Conference on Statistics "Flint: one city, one hundred years under variability", Flint, Michigan (US), June 2014, sponsored by the American Statistical Society, [https://digitalcommons.kettering.edu/flint\\_statistics/](https://digitalcommons.kettering.edu/flint_statistics/)

Assessing activities in the field of national and international competitive selection procedures

- Appointed by the *Australian Academy of Science* as a **referee for the Christopher Heyde Medal** (May 2021), to evaluate candidates' suitability for the award.
- Appointed by the *Dean of the Faculty of Science at Carleton University (Canada)* to complete an online **External Assessor's Report**, by reviewing the accomplishments of a faculty member considered for promotion to Associate Professor (August 2021).
- *Reviewer* of Discovery Grants for the **Natural Sciences and Engineering Research Council of Canada (NSERC)** since 2011.
- *Reviewer* for research applications submitted to the **Research Foundation - Flanders** (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO), an independent funding agency that supports fundamental research in all disciplines in Flanders (Belgium) (since 2012).
- *Member* of the **REPRIS** team, Register of Expert Peer Reviewers for Italian Scientific Evaluation, appointed by Italian Ministry of Education, University and Research (MIUR), for activities related to funding of proposals, or ex-ante, in itinere, and ex-post evaluation of research projects.

#### Member of Research projects

- [2023-2025] *Member of the research project PRIN 2022 (Progetti di Rilevante Interesse Nazionale) Project code: 2022LANNKC, Project title: "Innovative statistical tools for the analysis of large and heterogeneous customs data", Coordinator: RIANI Marco, ERC: PE1-14*
- *Principal investigator in PANACEA: PANdemic crisis solution via Adaptive soCial distancing bEhAviours and norms, H2020 project submitted, on 11/06/2020 to the Call ID: H2020-SC1-PHE-CORONAVIRUS-2020-2 Behavioural, social and economic impacts of the outbreak response, joining researchers from the following partners: University of Milano-Bicocca, Italy; Politecnico di Milano, Italy; IdeaTech srl, Italy; Universitat Politècnica de Valencia, Spain; Aalborg Universitet Copenhagen, Denmark; NTT Data Italia SPA, Italy; Universidad Autonoma Asuncion, Paraguay; Karolinska Institutet, Sweden; Altavia Italia, Italy; San Raffaele Hospital, Italy; Paris Brain Institute, France*
- [2022] *Member of the project PID2021-128314NB-I00, coordinated by Eustasio del Barrio y Luis Angel Garcia-Escudero, entitled "Development of new methodologies for classification for complex data", granted by the Spanish Ministerio de Ciencia e Innovación. Other members of the research group J. A. Cuesta-Albertos (University of Cantabria), M. Hallin (Université libre de Bruxelles), J.M. Loubes, (Université de Toulouse), D. Rodriguez-Vitores and M. Riani (University of Parma)*
- [2021] *Principal investigator in "CovX: un sistema di distanziamento sociale adattativo per limitare la diffusione del SARS-COV-2" project submitted to the Call: Fondo Integrativo Speciale per la Ricerca (FISR) Decreto Direttoriale n. 562 del 05/05/2020. The project has been positively evaluated by MIUR and received funding from Milano-Bicocca Fondo di Ateneo Quota Competitiva - 2021-ATEQC-0036.*
- [2020] *Member of the project H2020 PILLARS - Pathways to inclusive Labour Markets, coordinated by Fabio Mercorio, Univ. Milano-Bicocca.*
- [2017] *Coordinator of the project 2017-NAZ-0095, granted by Cariplo Foundation, to organize the scientific event YOUNG CLADAG, as a satellite of the eleventh scientific meeting of the CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society (SIS)*
- [2002-2004] *Member of the research co-funded PRIN (2002), entitled "Metodi statistici per ordinamenti stocastici con applicazioni socio sanitarie ed ambientali". Coordinator Antonio Forcina prot. n. 2002133957*
- [2008-2020] *Principal investigator in the following projects, based on the University Funds for Research, totaling to 34 455 Euro, and indicated by their IRIS code, as follows:*
  - 2021-ATE-0707: *"Robust estimation of Item Response models, for the measurement of person latent traits", in a scientific cooperation with M. Bonzini and A. Comotti, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico.*
  - 2020-ATE-0537: *"Robust variable selection in semi-supervised learning", with Andrea Cappelletto, in a scientific cooperation with T.B. Murphy, University College Dublin (Ireland), generating co-authorship of many papers*
  - 2019-ATE-0076: *"Semi-supervised learning in presence of outliers, label noise and unobserved classes", with Andrea Cappelletto, in cooperation with T.B. Murphy, University College Dublin (Ireland)*
  - 2017-ATE-0531: *"Stima Robusta di Misure di Normalità asimmetriche" to foster the scientific cooperation with A. Mayo Iscar and L.A. Garcia-Escudero University of Valladolid (Spain), and G. McLachlan of the University of Queensland, Brisbane (Australia) on Mixture modeling for skew data. 2016-ATE-0378: "Fuzzy Clustering mediante Misure di Modelli di Analisi Fattoriale" in scientific cooperation with A. Mayo Iscar and L.A. Garcia-Escudero, University of Valladolid (Spain)*
  - 2015-ATE-0262: *"Stima Robusta di Misure di Modelli di Analisi Fattoriale", in scientific cooperation with A. Mayo Iscar, L.A. Garcia-Escudero and A. Gordaliza, University of Valladolid (Spain)*
  - 2014-ATE-0514: *"Stima robusta per modelli mistura Cluster Weighted" in cooperation with A. Mayo Iscar, L.A. Garcia-Escudero and A. Gordaliza, University of Valladolid (Spain)*
  - 2013-ATE-0592: *"Massimizzazione vincolata della Likelihood per misure di Factor Analyzers e loro applicazioni in ambito economico", to start a scientific cooperation with A. Mayo Iscar, L.A. Garcia-Escudero and A. Gordaliza, University of Valladolid (Spain)*
  - 2011-ATE-0392: *"Inferenza per il nuovo indice di concentrazione di Zenga, nel caso di distribuzioni con code pesanti" within a scientific cooperation with R. Zitikis, University of Western Ontario, London (Canada)*

- 2010-ATE-0375: “Intervalli di confidenza parametrici per gli indici di concentrazione di Gini e di Zenga”, with R. Zitikis, University of Western Ontario, London (Canada)
- 2009-ATE-0515: “Distribuzione asintotica di un nuovo indice di disuguaglianza”, with R. Zitikis, University of Western Ontario, London (Canada)
- 2008-ATE-0089: “Intervalli di Confidenza per l'indice di Concentrazione di Zenga”, with Leo Pasquazzi, in a scientific cooperation with R. Zitikis, University of Western Ontario, London (Canada)

## SUPERVISION OF OR PARTICIPATION IN PUBLISHING COMMITTEES OF SCIENTIFIC MAGAZINES

(For each entry, specify year, role, scientific magazine etc.)

### Editorial Activities

- Associate Editor of Statistics and Computing.
- Reviewer for **Mathematical Reviews**, published by the [American Mathematical Society](#) (AMS)
- Guest Editor, with Thomas Brendan Murphy, Giovanni Porzio, and Domenico Vistocco, for CLADAG 2019 special issue of the journal **Statistical Analysis and Data Mining: The ASA Data Science Journal**, issued in 2021.
- Editor, with Giovanni Porzio and Simona Balzano, of Book of short papers Cladag2019, Centro Editoriale di Ateneo Università di Cassino e del Lazio Meridionale, Cassino (Italy), ISBN: 978-88-8317-10
- Guest Editor, with Claudio Conversano, Thomas Brendan Murphy, and Anna Paganoni, of **Statistical Analysis and Data Mining: The ASA Data Science Journal**, for CLADAG 2017 Special Issue: New trends in Complex Data Analysis and Classification.
- Guest Editor, with Thomas Brendan Murphy, Paolo Giudici and Carla Rampichini, of the CLADAG 2015 Special Issue: Selected Papers on Classification and Data Analysis of the journal **Statistical Analysis and Data Mining: The ASA Data Science Journal**, 10, 1, 2017, <https://onlinelibrary.wiley.com/toc/19321872/10/1>
- Editor, with Laura Deldossi and Maurizio Vichi and Luca Bagnato, of the **Springer Book: Statistical Learning of Complex Data** (2018), Springer Series “Studies in Classification, Data Analysis, and Knowledge Organization”.
- Editor, with Francesco Mola and Mariangela Zenga, of **Cladag 2017 Book of Short Papers**, ISBN 978-88-99459-71-0, Universitas Studiorum (E-book, PDF version, September 7, 2017), [http://www.universitas-studiorum.it/1/cladag\\_2017\\_book\\_of\\_short\\_papers\\_2852494.html](http://www.universitas-studiorum.it/1/cladag_2017_book_of_short_papers_2852494.html)

### Journal Board Membership

- Member of the Editorial board of the Journal “Socio-Economic Modelling and Forecasting” <http://semf.pl>
- Member of the Editorial Board of the journal Statistika: Statistics and Economy Journal, (since 2014) [https://www.czso.cz/csu/czso/editorial\\_board](https://www.czso.cz/csu/czso/editorial_board).
- Member of the Editorial Board of the journal Silesian Statistical review, (since 2013) [http://silesianstatreview.ue.wroc.pl/?page\\_id=33](http://silesianstatreview.ue.wroc.pl/?page_id=33).
- Guest Editor, with Paolo Giudici, Brendan Murphy e Carla Rampichini, of the “CLADAG 2015 Special Issue: Selected Papers on Classification and Data Analysis” of Statistical Analysis and Data Mining: The ASA Data Science Journal, 10, 1, 2017, <https://onlinelibrary.wiley.com/toc/19321872/10/1>
- Member of the Editorial Committee of the journal Statistica & Applicazioni (since 2005), <http://www.vitaepensiero.it/rivista/statistica-applicazioni-5.html>
- Member of the Scientific board of the Journal Quantitative Methods in Economics <http://qme.sggw.pl/en/scientific-board/> (since 2013).

## NATIONAL AND INTERNATIONAL AWARDS AND ACCOLADES FOR RESEARCH ACTIVITY

(Specify award, date, issuing organisation, etc.)

- 2016 Ethel Raybould Award from the University of Queensland, Brisbane (Australia) and Visiting Scholar at the same Institution, to start research with Geoff McLachlan.
- 2011 Faculty Research Program (FRP), awarded by the International Council for Canadian Studies (ICCS), for the research project entitled: “Cross-Regional Income Inequality in Canada and Italy: Issues and Evidence”.
- 2011 Visiting University Scholar Program (VUSP) award, issued by the Office of the Vice-President (Research and International Relations), University of Western Ontario, London, Ontario (Canada) to start research with R. Zitikis.
- 2011 Recipient of the designation as “Western Fellow” at the University of Western Ontario, London (Canada).

## SPEAKING AT CONFERENCES AND CONVENTIONS OF INTERNATIONAL INTEREST

(Specify conference/convention title, date, etc.)

1. Plenary speaker at the 41st Conference on Multivariate Statistical Analysis, Lodz (Poland), November 6-8, 2023. Title of the talk: Measuring income inequality via percentile relativities.

2. **Plenary** speaker at the 14th Scientific Meeting of the Classification and Data Analysis Group, Salerno (Italy), September 11-13, 2022. Title of the talk: To get the best, tame the “beast”: robust ML estimation for mixture models.
3. Speaker at the Workshop “Tackling Inequality: Challenges, Research, and Policies? University of Milan-Bicocca, April 14, 2023. Title of the talk: Measuring income inequality via percentile relativities.
4. Speaker at the Conference of European Statistics Stakeholders 2022, CESS2022, Rome (Italy), October 20- 21, 2022. Title of the talk: A new parametric approach to Gender Gap with application to EUSILC data in Poland and Italy.
5. Speaker at 10th International Conference on Soft Methods in Probability and Statistics, SMPS2022, Valladolid (Spain), September 14-16, 2022. Title of the talk: Monitoring tools in Robust CWM for the analysis of crime data.
6. Speaker at the 6th Workshop on Models and Learning in Clustering and Classification, MBC2, Catania (Italy), Aug. 31 - Sept 2, 2022 Title of the talk: Monitoring the robust Cluster-Weighted model.
7. Speaker at the 17th conference of the International Federation of Classification Societies, IFCS2022, Porto (Portugal), July 19-23, 2022. Title of the talk: Monitoring Hyperparameter Choice for Robust Cluster Weighted Model.
8. Speaker at the 51st Scientific Meeting of the Italian Statistical Society, SIS2022, Caserta (Italy), June 22-24, 2022. Title of the talk: Robustifying the Rasch model with the Forward Search.
9. Speaker at the 15th International Conference on Modelling and Forecasting of Socio-Economic Phenomena, Zakopane (Poland), May 9-12, 2022, organised by the Department of Statistics at Cracow University of Economics and the Committee of Statistics and Econometrics of the Polish Academy of Sciences. Title of the talk: Assessing Psychometric Scales through IRT-based Modeling, with Applications to Covid-19 Data.
10. **Invited** speaker at the Session “Advances in robust cluster analysis” at the 13th Scientific Meeting of the Classification and Data Analysis Group, Florence (Italy), September 9-11, 2021. Title of the talk: Robust classification of spectroscopic data in agri-food: a first analysis on the stability of results.
11. Speaker at the 51th Scientific Meeting of the Italian Statistical Society (SIS 2021), June 21-25, 2021, Florence (Italy). Title of the talk: Monitoring tools for robust estimation of Cluster weighted models.
12. **Plenary** speaker at the 14th International Conference on Modelling and Forecasting of Socio- Economic Phenomena, Zakopane (Poland), May 10-13, 2021, organised by the Department of Statistics at Cracow University of Economics and the Committee of Statistics and Econometrics of the Polish Academy of Sciences. Title of the talk: Robust dimension reduction for classification of spectroscopic data in agri-food.
13. **Plenary** speaker at the 38<sup>th</sup> Scientific Conference on Multivariate Statistical Analysis, Lodz (Poland), November 4-6, 2019. Title of the talk: Advances in learning from contaminated datasets.
14. **Invited** speaker at the Session “Modelling and Clustering Complex Data” organized by Geoffrey McLachlan at the 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2019), Senate House, University of London (UK), 14-16 December 2019. Title of the talk: Robust and efficient estimates of partition and model parameters: a step beyond the usual normality assumption.
15. **Invited** speaker at the **Conference “Stochastic Geometry”**, Saint-Petersburg (Russia) <https://www.geometry2019.com/September> September 16-20, 2019, sponsored by the Euler Mathematical Institute & Chebyshev Laboratory of St. Petersburg State University <https://www.geometry2019.com/participants>. Title of the talk: Inferential results for a new inequality curve.
16. **Invited** speaker at the 16<sup>th</sup> Conference of the International Federation of Classification Societies, August 26-29, 2019, Thessaloniki (Greece) within the Invited Session “Classification methods in economics and business”. Title of the talk: Fuzzy clustering with skew components, with applications in Economics and Business.
17. **Invited** speaker at the 13th International Scientific Conference on Modelling and Forecasting of Socio-Economic Phenomena, Zakopane (Poland), May 13-16, 2019. Title of the talk: Robust fuzzy clustering for skew socio-economic data.
18. **Invited** speaker at the 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), December 14-16, 2018, Pisa (Italy), within the session “Supervised and Unsupervised Learning”. Title of the talk: Extending robust fuzzy clustering to skew data.
19. Speaker at MBC2 International workshop on Model-Based Clustering and Classification, Catania (Italy), September 5-7, 2018. Title of the talk: Exploring robust fuzzy clustering on multivariate skew data <http://mbc2.unict.it/program3.shtml>
20. **Invited** speaker at CompSTAT 2018, Iasi (Romania), August 28-31, 2018, within the session “CO068: Soft clustering” (<http://www.compstat2018.org/organized.php>). Title of the talk: Fuzzy clustering for heterogeneous skew data.
21. **Invited** speaker at the 49th Scientific Meeting of the Italian Statistical Society (SIS 2018), June 20-22, 2018, Palermo (Italy), within the Solicited Session on “New perspectives in supervised and unsupervised classification”. Title of the talk: Robust Updating Classification Rule, with applications in Food Authenticity Studies.
22. **Plenary** speaker at the 19th International Scientific Conference on Quantitative Methods in Economics (QME), Warsaw (Poland), June 18-19, 2018, Title of the talk: Analyzing and comparing gender gap in Poland and Italy <http://mibe.sggw.pl/en/>
23. **Invited** speaker at the XXXVII Congreso Nacional de Estadística e Investigación Operativa y de las XI Jornadas de Estadística Pública, Oviedo (Spain), May 29-June 1st, 2018. Title of the talk: Advances in robust estimation of skew normal mixtures: addressing the issue of truncated moments.

24. **Plenary** speaker at the 12th International Scientific Conference on Modelling and Forecasting of Socio-Economic Phenomena, Zakopane (Poland), May 8-10, 2018. Title of the talk: Robust clustering methods for multivariate socio-economic data
25. **Invited** speaker at the 10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017), December 16-18, 2017, Senate House, University of London (UK), "Session EO232: Clustering/classification and mixtures I". Title of the talk: Advances in robust estimation of skew normal mixtures.
26. **Plenary** speaker at the III International Workshop on Proximity Data, Multivariate Analysis and Classification, Valladolid (Spain), October 26-27, 2017. Title of the talk: To get the best, tame the beast: constrained ML estimation for mixture models <http://www.eio.uva.es/wamyc/program.html>
27. **Invited** speaker at the Summer Session of the Working Group on Model-Based Clustering, Perugia (Italy), July 17-21, 2017. Title of the talk: New developments on robust estimation for mixtures <http://w3.mi.parisdescartes.fr/~cbouveyr/WGMBC17.html>
28. Speaker at the Classification Society Conference, UC Santa Cruz at the Silicon Valley campus in Santa Clara, Santa Clara (USA), June 21-24, 2017. Title of the talk: Robust parsimonious mixture models for fuzzy clustering.
29. **Invited** speaker in the Session "EO115: Mixture models for complex data sets", 9th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2016), Sevilla (Spain), December 9-11, 2016. Title of the talk: A fuzzy version of robust mixtures of Gaussian factor analyzers.
30. **Invited** speaker at the Conference on Multivariate Statistical Analysis MSA2016, Lodz (Poland), November 6-9, 2016. Title of the talk: Parsimonious and robust clustering.
31. **Invited** speaker in the Session "Robust statistics", Soft Methods in Probability and Statistics SMP2016, Rome (Italy), September 12-14, 2016. Title of the talk: Fuzzy clustering through robust factor analyzers.
32. **Invited** speaker in the Session "Robust estimation in model-based clustering", MBC2 Workshop on Model-Based Clustering and Classification, Catania (Italy), September 5-7, 2016. Title of the talk: Robust estimation in model-based clustering.
33. **Invited** speaker in the Session "CI083: Recent developments in mixture models", 22th International Conference on Computational Statistics COMPSTAT 2016, Oviedo (Spain), August 23-27, 2016. Title of the talk: Robust clustering of multivariate skew data.
34. Speaker at the 48th Scientific Meeting of the Italian Statistical Society, Salerno (Italy), June 8-10, 2016. Title of the talk: Robust estimation of mixtures of Skew Normal Distributions.
35. **Invited** speaker in the Specialized Session "EO190, Advances in mixture modelling", 8th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2015), London (UK), December 12-14, 2015. Title of the talk: Robust estimation for mixtures of skew data.
36. Speaker at the 10th Scientific Meeting of the CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society, Cagliari (Italy), October 8-10, 2015. Title of the talk: Robust clustering for heterogeneous skew data.
37. **Invited** speaker in the Specialized Session SP4: "Mixture models: Recent Developments and Applications for Unsupervised and Supervised Classification", Conference of the International Federation of Classification Societies (IFCS), Bologna (Italy), July 6-8, 2015. Title of the talk: The joint role of trimming and constraints in robust estimation for mixtures of skew normal.
38. Speaker at IBS Joint meeting of the International Biometric Society (IBS) Austro-Swiss and Italian Regions, Milan (Italy), June 16-18, 2015. Title of the talk: A joint application of trimming and constraints for robustifying the estimation of mixtures of factor analyzers.
39. **Invited** speaker in Session "ES89: Robust statistics in R", 7th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2014), 2014, Pisa (Italy), December 6-8, 2014. Title of the talk: Robust model estimation, through trimming and constraints, for mixtures of factor analyzers.
40. Speaker at AISC 2014, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC (USA), October 10-12, 2014. Title of the talk: Robust mixtures of factor analyzers via the trimming approach.
41. Speaker at MBC2 - International Workshop on Model Based Clustering and Classification, Catania (Italy), September 3-5, 2014. Title of Lightning talk for poster presentation: Robust mixtures of factor analyzers.
42. **Invited** speaker at the International Conference on Statistics (sponsored by the American Statistical Association), Flint, Michigan (USA), June 23-28, 2014. Title of the talk: Measuring Inequality at the time of the Great Divergence.
43. **Invited** speaker in the Solicited Session "SL13 - Computations With Intractable Likelihood", 47th Scientific Meeting of the Italian Statistical Society, Cagliari (Italy), June 10-14, 2014. Title of the talk: An adaptive method to robustify ML estimation in Cluster Weighted Modeling.
44. **Invited** speaker in Session "ES28: Advances in robust data analysis" at the 6th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2013), London (UK), December 14-16, 2013. Title of the talk: A robust approach to Cluster Weighted Modeling.
45. Speaker at Statistical Methods for Evaluation IES 2013 - Innovation and Society 2013, Milan (Italy), December 9-10, 2013. Title of the talk: A latent variable model for market segmentation.
46. Speaker at Arbeitsgruppe Datenanalyse und numerische Klassifikation (ADDANK) and British Classification Society (BCS) Meeting, UCL London (UK), November 8-9, 2013. Title of the talk: Data driven constraints for Gaussian mixtures of factor analyzers: an application to market segmentation.

47. Speaker at 9th Scientific Meeting of the CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society, Modena (Italy), September 18-20, 2013. Title of the talk: Data driven EM constraints for mixtures of factor analyzers.
48. Invited speaker in Session “Latent variable models for marketing research” at the Italian Statistical Society 2013 Conference: Advances in Latent Variables - Methods, Models and Applications, Brescia (Italy), June 19-21, 2013. Title of the talk: Market segmentation via mixtures of constrained factor analyzers.
49. Invited speaker in Session “EUC 55: Statistical Modeling and Inference in Economics And Insurance”, AISC 2012, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, October 5-7, 2012, Greensboro, NC (USA). Title of the talk: Unequal perspectives on inequality: a comparison among the evergreen Gini and the new Zenga indices.
50. Speaker at MBC2 - International Workshop on Model Based Clustering and Classification, Catania (Italy), September 5-7, 2012. Title of the poster: Constrained EM algorithms for Gaussian mixtures of factor analyzers.
51. Speaker at 46th Scientific Meeting of the Italian Statistical Society, Rome (Italy), June 20-22, 2012. Title of the talk: Closed Likelihood-Ratio Testing Procedures to Assess Similarity of Covariance Matrices.
52. Speaker at 46th Scientific Meeting of the Italian Statistical Society, Rome (Italy), June 20-22, 2012. Title of the talk: Capital income inequality: evidences from ECHP data.
53. Speaker at International Interdisciplinary Conference organized by the International Institute of Social and Economic Sciences, Palermo (Italy), April 16-18, 2012. Title of the talk: Not all measures of income inequality are equal: A comparison between the Gini and the Zenga.
54. Invited speaker in Session “New Trends in Measuring Inequality” at the 45th Annual Conference of the Canadian Economics Association, Ottawa (Canada), June 2-5, 2011. Title of the talk: The Zenga inequality measure: statistical inference on capital income survey data.
55. Speaker at International Workshop on New results and perspectives on inequality and poverty, Milan (Italy), 2011. Title of the talk: Estimating Gini’s and Zenga’s inequalities on the ECHP dataset.
56. Speaker at Seventh Scientific Meeting of the CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society, Catania (Italy), September 9-11, 2009. Title of the talk: Multivariate tests for patterned covariance matrices.
57. Speaker at Workshop on Income Distribution, Second Meeting, University of Milano Bicocca - Milan (Italy), 2009. Title of the talk: Asymptotic Confidence Intervals for a New Inequality Measure.
58. Speaker at GfKl 2008: 32nd Annual Conference of the German Classification Society, Joint Conference with the British Classification Society (BCS) and the Dutch/Flemish Classification Society (VOC), Hamburg, (Germany), July 16-18, 2008. Title of the talk: A Note on Constrained EM Algorithms for Mixtures of Elliptical Distributions. <http://gfk2008.hsu-hh.de/>
59. Speaker at the 6th Scientific Meeting of the CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society, Macerata (Italy), September 12-14, 2007. Title of the talk: Constrained monotone EM algorithms for mixtures of multivariate t-distribution.
60. Speaker at the International conference in memory of two eminent social scientists: C. Gini and M. O. Lorenz, Certosa di Pontignano, Siena (Italy), May 23-26, 2006. Title of the talk: Convergence of the Sample Mean Difference to the normal distribution. <http://www3.unisi.it/eventi/GiniLorenz05/programme26.htm>
61. Speaker at the International conference in memory of two eminent social scientists: C. Gini and M. O. Lorenz, Certosa di Pontignano, Siena (Italy), May 23-26, 2006. Title of the talk: Confidence Intervals for Gini’s Mean Difference: simulation results. <http://www3.unisi.it/eventi/GiniLorenz05/programme24.htm>
62. Speaker at 5-th Scientific Meeting of the CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society, Parma (Italy), June 6-8, 2005. Title of the talk: New results on a partial ordering of dependence.
63. Speaker at 41th Scientific Meeting of the Italian Statistical Society, Milan (Italy), 2002. Title of the talk: Measures of association in the Fréchet class.

## **MANAGING, ORGANISATIONAL, AND SERVICE ACTIVITIES**

### **MANAGING TASKS AND DUTIES UNDERTAKEN AT COLLEGIATE BODIES AND COMMITTEES, AT CONSIDERABLE PUBLIC AND PRIVATE INSTITUTIONS AND SCIENTIFIC AND CULTURAL ORGANISATIONS, OR AT THE UNIVERSITY OF MILAN OR AT OTHER UNIVERSITIES**

*(Specify task/duty, institution, date, etc.)*

International projects (some)

- **Organizer of the ClaDAG III International School on Classification and Data Analysis, Robust Statistics: Foundations and Recent Developments.** Lecturers: Anthony Atkinson, London School of Economics (UK); Agustín Mayo-Iscar, University of Valladolid (ES); Marco Riani, University of Parma (IT), Francesca Greselin, University of Milano-Bicocca (IT). The one-week residential school, addressed to Master, PhD students and postdocs coming worldwide, took place at the Lake Como School of Advanced Studies on May 2-6, 2022. <https://rsfd.lakecomoschool.org/>

- Member of the **Board for International Programmes and Mobility of the University of Milano-Bicocca** (appointed in September 2015, confirmed for 2019/2022), chaired by the Vice Rector for International Relationships.
- Elected person in charge of the Erasmus+ programs for students in Economics and Statistics (outgoing and incoming, elected 12/01/2015, till 12/01/2018).
- **Coordinator of the International Relations for the Department of Statistics and Quantitative Methods** (elected 12/01/2015, confirmed for 2019/2022). We have more than 40 inter-University agreements, some of them involve the whole Institution at large, other are Exchange Agreements allowing students to spend a period of time abroad at a partner university, and Double Degree Agreements as well. The involved countries are: Argentina, Belgium, Denmark, Estonia, Finland, France, Germany, Mexico, Norway, Poland, Portugal, Spain, Sweden. In the last 4 years, we have received 24 researchers coming from abroad, as visiting scholars at our Department, three of them inside the Erasmus Teaching Mobility Program.

#### Third mission activities (some)

- Organization of the event **Education, Sustainability, Social Justice: the Food Bank in action**, for **Festival GenerAzioni**, part of the University's calendar of events for 2021. The event will take place in the territory of Milan Municipality 9 and the Bicocca District, to involve citizens, schools, public bodies, hospitals, companies, services, businesses, and cultural realities in the themes of Education, Sustainability and Social Justice, October 7-10, 2021.
- Co-organization of **Open Day Activities** for the School of Economics. The events, named "Spring in Bicocca: test your future" offered to fourth and fifth year high school students the opportunity to spend a few days as freshmen, attending classes and workshops, real simulations of university life. I gave the talk "Mind the gap: Statistics to assess the Gender inequality", May 18, 2021. <https://www.youtube.com/watch?v=UhaHXLNRdQg>
- Organization of a **series of seminars for practitioners, professional, master and PhD students** (10h lectures). Title: An introduction to Machine Learning in insurance, April 29-31, 2020. Lecturer: Giorgio Alfredo Spedicato, Ph.D, FCAS, FSA, CStat, Analytics di UnipolSai.
- Co-organization of the **workshop Doctorate and companies: the doctorate as an engine of innovation, to enhance cooperation between the Milano-Bicocca PhD School and Lombardy firms**. I have invited Ennio Menicucci, Head of Operational Risk Analytics and Oversight, Unicredit, to take part to the Round Table, October 14, 2019.

#### Institutional and/or coordination positions within of the University (some)

- President of the Board for Quality Assurance of the University of Milano-Bicocca Master's degree course in Artificial Intelligence for Science and Technology (appointed in September 2022).
- *Member (appointed by the Rector) of the Inter-University working group (University of Milano-Bicocca, University of Milano, University of Pavia) for the establishment of two Master's degree courses on Artificial Intelligence (appointed in February 2021).*
- Member of the team of professors to establish an agreement with Birkbeck, University of London, for students enrolled in the Milano-Bicocca Master degree in Economics and Finance (appointed in March 2021).
- Member of the Team for the **Gender Equality Plan** of the University of Milano-Bicocca (appointed by the Rector in July 2021), to devise, monitor and support actions for the promotion of Equality in Research and Academia.
- Member of the working group on **Gender issues of the University of Milano-Bicocca** (appointed by the Rector in October 2020), to promote research and international projects on this crucial issue, and to prepare the Gender Budgeting 2022, by collecting internal and external data, analyzing and interpreting results.
- Member of the Boards for Quality Assurance of the University of Milano-Bicocca BSc of Economics for Banks, Insurance and Financial Institutions, and MSc in Economics and Finance (appointed in September 2020).

#### Organization of Scientific Conferences and Sessions

- Organizer of the Invited Session Robust methods for the analysis of Complex data, at the 10th International conference on Soft Methods in Probability and Statistics, Valladolid (Spain), 14-16 September 2022.
- Organizer of the Specialized Session SPE6 - Advances in Classification and Data Analysis, at the 51st Scientific Meeting of the Italian Statistical Society SIS2022, Caserta (Italy), 22-24 June 2022.
- Member of the Organizing Committee of DIME2020, International conference on Distributions and Inequality Measures in Economics, 20-21 February 2020 - University of Milano-Bicocca (Italy).
- Member of the Organizing Committee of SIS2019, the Conference of the Italian Statistical Society Milan (Italy), 19-21 June 2019, "Smart Statistical Methods for Smart Applications".
- Organizer, with Ričardas Zitikis, of the Session EO108: Tinkering with Gini: Adaptations of the old idea to present-day realities, at CMStatistics2018, Pisa (Italy), 14-16 December, 2018. Speakers: Nadezhda Gribkova, Joseph Gastwirth, Youri Davydov, and Ričardas Zitikis. <http://cmstatistics.org/CMStatistics2018/organized.php>
- Organizer of the Session on New results in Model Based classification and clustering, at the 23<sup>rd</sup> International Conference on Computational Statistics COMPSTAT 2018, Iasi (Romania), 28-31 August 2018. Speakers: Christophe Biernacki, Ranjan Maitra, Andrea Cappelletto. <http://www.compstat2018.org/invited.php>

- Chair of the Organizing Committee for the 11<sup>th</sup> International Meeting of the Classification and Data Analysis Group (of the Italian Statistical Society), Milan (Italy), 13-15 September 2017.
- Organizer (with Salvatore Ingrassia) of the Invited Session CI083: Mixture models and classification, at the 22th International Conference on Computational Statistics COMPSTAT 2016, Oviedo (Spain), 23-26 August 2016, <http://www.compstat6.org/invited.php>
- Organizer of the Session CO095: Recent contributions to robust mixture modelling, at the 22th International Conference on Computational Statistics COMPSTAT 2016, Oviedo (Spain), 23-26 August 2016.
- Organizer of the Session SOL1 Advances in Density-based clustering, at the 10th International Meeting of the Classification and Data Analysis Group (of the Italian Statistical Society), Cagliari (Italy), 8-10 October 2015, <http://convegni.unica.it/cladag2015/program08102015/>
- Organizer of the Session on Recent developments in Inference based on the Lorenz and Gini index of inequality, at the 7th International Conference of the ERCIM WG on Computational and Methodological Statistics - ERCIM 2014, Pisa (Italy), 6-8 December 2014, <http://cmstatistics.org/ERCIM2014/organized.php>
- Organizer of the Session on Measuring inequality at the time of the Great Divergence, at the ASA sponsored International Conference on Statistics, Flint, Michigan (US), 24-28 June 2014, [https://digitalcommons.kettering.edu/flint\\_statistics/](https://digitalcommons.kettering.edu/flint_statistics/)
- Organizer (with Ričardas Zitikis) of the Session on New Trends in Measuring Inequality at the Canadian Economics Association (CEA) 45th Annual Conference. University of Ottawa, Ontario (Canada), 2-5 June 2011, <https://economics.ca/2011/en/program.php>
- Organizer, Chair and Discussant of the Specialized Session on Advances in Student-t based statistical modeling for the Classification and Data Analysis Group of the Italian Statistical Society, ClaDAG 8th Scientific Meeting, University of Pavia (Italy), September 2011, <http://archivio.paviauniversitypress.it/pdf-0a/cerchiello-cladag-2011.pdf>

#### Organized Seminars within Departmental activities

- Ahmed Alsayed, PhD, University of Milan (Italy), Title: Robust Estimation and Outlier Detection in Energy-Environmental Sciences, March 30, 2022.
- Agustin Mayo-Iscar, PhD, University of Valladolid (Spain), Title: Robust proposals for clustering based on trimming on constraints, May 12, 2022.
- Youri Davydov, PhD, University of St. Petersburg (Russia), series of lectures for PhD students and re- searchers (18 h lectures), Title: Stochastic Processes, February 24-27, 2020.
- Giorgio Alfredo Spedicato, PhD, FCAS, FSA, CStat, UnipolSai Analytics, Title: Actuarial models for non-life pricing: a comparison between traditional GLMs and Machine Learning methods, May 22, 2019. EcoFIN
- Youri Davydov, PhD, University of St. Petersburg (Russia), series of lectures for PhD students and re- searchers (18 h lectures), Title: Stochastic Processes, February 19-26, 2019.
- Youri Davydov, PhD, University of Lille, Lille (France), series of lectures for PhD students and researchers (18 h lectures), Title: Stochastic Processes, February 5-14, 2018.
- Youri Davydov, PhD, University of Lille, Lille (France), series of lectures for PhD students and researchers (18 h lectures), Title: Stochastic Processes, March 21-30, 2017.
- Kaleb Leemaqz, PhD, University of Queensland, Brisbane (Australia), Title: Scaling Up and Out: Platforms and Technologies for Big Data in Machine Learning, September 20, 2016.
- Sharon Lee, PhD, University of Queensland, Brisbane (Australia), Title: A mixed effects skew t-mixture model for the clustering and classification of batch data, September 22, 2016.
- Ankit Jain, internship student from IIT Kanpur (India), Title: Building an R package, June 11, 2015; Title: Toward an R package for the Zenga inequality measure, July 17, 2015.
- Ricardas Zitikis, PhD, University of Western Ontario, London (Canada), Title: Assessing risks: Issues and solutions, December 3, 2014.
- Abdelhakim Necir, University Mohamed Khider of Biskra (Algeria), Title: A Kaplan-Meier process for a heavy-tail distribution toward the tail index estimation under random censoring, September 19, 2014.
- Geoff McLachlan, University of Queensland, Brisbane (Australia), series of seminars for PhD students and researchers (10 h lectures), Title: An Introduction to Mixture Modelling, September 8, 2014; Title: On Extensions to Normal Mixtures for Modelling Complex Datasets, September 8, 2014.
- Anu Khandwal, internship student from IIT Kanpur (India), Title: Measuring inequality in U.S. cities at the time of the great divergence, July 18, 2014.
- Madan L. Puri, Professor Emeritus at Indiana University, Bloomington (USA). Title: Asymptotic Normality, Rates of Convergence, and Large Deviation Probabilities for a Broad Class of Statistics, June 24, 2013.
- Bradley A. Corbett, Statistics Canada Research Data Centre, University of Western Ontario, London (Canada), Title: Beyond the formula: How methodology can impact measures of income inequality, April 13, 2012.
- Ricardas Zitikis, University of Western Ontario, London (Canada), Empirical Processes in Econometrics: A Practitioner's viewpoint, series of seminars for PhD students and researchers (20 h lectures), Univ. Milano-Bicocca, September 8-10, 2010.

#### Contribution to Milano-Bicocca PhD School

- Member of the Selection Committee for the Candidates to the XXXVI Cycle of the Ph.D. School of Economics and Statistics - ECOSTAT , Univ. Milano Bicocca.
- **Vice Coordinator of the Ph.D. School in Statistics and Mathematical Finance** (XXXIII Cycle)
- Member of the PhD School Board of the University of Milano-Bicocca (since 2017).
- Member of the Scientific Committee of the Ph.D. School of Economics and Statistics - ECOSTAT (since 2018).
- Member of the Scientific Committee of the Ph.D. School of Statistics and Mathematics for Finance (since 2011).
- Member of the Selection Committee for the Candidates to the XXXII Cycle of the Ph.D. School of Statistics and Mathematics for Finance, Univ. Milano Bicocca.
- Member of the Selection Committee for the Candidates to the XXXI Cycle the Ph.D. School of Statistics and Mathematics for Finance, Univ. Milano Bicocca.

**RECOMMENDATION LETTERS**



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**RE: Prof. Francesca Greselin Promotion**

December 19th, 2022

To Whom It Concerns,

I would like to give my support to Prof. Francesca Greselin's application for promotion to full professor. I have known Prof. Greselin for seven years through meeting her at conferences, seminars and workshops, through co-editing journal special issues and through co-supervising a PhD student.

I am Full Professor of Statistics in University College Dublin, Ireland. I have research interests in model-based clustering, classification, latent variable modelling, network modelling and complex data modelling. I have co-authored two books and have published over a hundred papers in statistics and application domain journals. I am Editor for Social Sciences and Government for the Annals of Applied Statistics. I am currently a member of the Council of the Royal Statistical Society and I am former president of the Irish Statistical Association. I have held visiting positions at the Center for Statistics & Social Sciences, University of Washington and the Collegium — Institut d'Études Avancées de Lyon. I am basing my assessment of Prof. Greselin's promotion application in the context of this background.

Prof. Greselin is a well established and highly regarded researcher in statistics, particularly in the areas of robust methods for model-based clustering and computational statistics. Prof. Greselin has worked on a number of application domains, with a particular focus on economic and social applications. Prof. Greselin has made important research contributions which I will outline below. Furthermore, Prof. Greselin has taken a strong leadership role in the subject of statistics which I will also outline below. I feel that the promotion to Full Professor is appropriate for Prof. Greselin and a suitable reward for her achievements and continuing contribution to the subject nationally and internationally.

Prof. Greselin's has made important contributions to the area of robust model-based clustering and classification. She has contributed many important results in this domain, in particular on the use of trimming methods and constraints to achieve robustness. This work has greatly expanded the

applicability of model-based clustering methods to situations where outliers and heavy tailed distributions arise. The work has been published in the top computational statistics journals including *Statistics & Computing*, *Journal of Computational & Graphical Statistics* and *Computational Statistics & Data Analysis*, as well as the top clustering journal, *Advances in Data Analysis & Classification*. This work has been completed by her own group and in collaboration with international groups in Università degli Studi di Catania, Universidad de Vallovid, University College Dublin, amongst others.

Prof. Greselin's work on inequality measures has been published in highly regarded international journals including *Journal of Applied Statistics*, *Communications in Statistics — Simulation & Computation* and the *Econometrics Journal*. This work has been done by her own group and in collaboration with researchers in Université de Lille, University of Western Ontario, amongst others.

Thus, Prof. Greselin's research outputs in these, and other domains, have been published in top quality venues. The work has been from a mix of independent and collaborative projects. This demonstrates the prominent role that Prof. Greselin and her work has in the international statistics research community.

Prof. Greselin has undertaken a number of important roles in the subject of statistics, within the university, within Italy and internationally. Prof. Greselin is president elect of the Classification and Data Analysis Group (CLaDAG) of the Italian Statistical Society (SIS) and she has served on the CLaDAG board for a number of years; Prof. Greselin has co-edited three special issues of the journal *Statistical Analysis & Data Mining* arising from the CLaDAG biannual conference. Prof. Greselin is also an Associate Editor for the prestigious international journal, *Statistics & Computing*. Prof. Greselin has also served as a reviewer for a wide range of international journals and research funding agencies. Prof. Greselin has organised a number of international workshops and conferences. The breadth of these roles demonstrate the profile that Prof. Greselin has in the subject of statistics internationally.

Prof. Greselin has supervised seven PhD students, three of which are current students and four of whom have graduated. The students have worked on a range of topics from inequality measures, to clustering and classification and latent variable modelling. I co-supervised Andrea Cappozzo with Prof.

Greselin and the project was highly productive and Dr. Cappozzo now holds an assistant professor position in Politecnico di Milano. The success of Prof. Greselin's students demonstrates the high level of research being completed in her research group.

I strongly support Prof. Greselin's application for this promotion. I feel that she has been operating at a level where this promotion is appropriate for some time. She is an important member of statistics research community, particularly in the areas of robust methods for clustering and classification and the measurement of inequality. The promotion would be a suitable recognition for her achievements and would increase her authority in the subject of statistics. If you have any query about this letter, don't hesitate to contact me.

Your sincerely,

A handwritten signature in black ink, reading "Brendan J. Frey". The signature is written in a cursive, flowing style. The first name "Brendan" is written in a larger, more prominent script, and the last name "Frey" is written in a similar but slightly smaller script. The middle initial "J." is written in a smaller, more compact script between the first and last names.

December 19, 2022

Ričardas Zitikis  
School of Mathematical and Statistical Sciences  
Western University  
London, Ontario, Canada  
Email: rzitikis@uwo.ca

To Whom It May Concern,

I am writing this letter to wholeheartedly recommend Francesca Greselin for the position of Full Professor of Statistics. I have no doubt that her teaching and research skills, multidisciplinary knowledge, and international reputation make her an excellent candidate for the position.

Reading her most impressive resume, I see that Francesca has been an Associate Professor of Statistics at the University of Milano-Bicocca since 2005; previously being an Assistant Professor of Statistics since 1998. In 2019, Francesca obtained the Italian Full Professor Qualification. She authored over 40 peer-reviewed scientific papers, published in high-impact international journals such as *Statistics and Computing*, *Computational Statistics and Data Analysis*, *Journal of Computational and Graphical Statistics*, *Econometrics*, *Extremes*, *Statistical Methods and Applications*, *The American Statistician*, and many others. She also published 60 more papers with ISBN, or chapters in books, that underwent blind peer-reviews.

I have known Francesca since 2009, when I was analyzing one of her many far-reaching research contributions on new inequality indices, as at that time I was also doing extensive research on similar topics. Most naturally, we then began our scientific cooperation that continues flourishing to this very day, with our most recent research results submitted for publication just a couple of months ago, written jointly with Vytautas Brazauskas of the University of Wisconsin-Milwaukee (“Measuring income inequality via percentile relativities,” available for reading at Research Square <https://doi.org/10.21203/rs.3.rs-2082385/v1>).

In 2011, Francesca came to Western University, Canada, as a Visiting Researcher, and we worked closely on a common research project. During her most impressive and fruitful visit, Francesca was awarded the prestigious designation of “Western Fellow,” bestowed by the Visiting University Scholar Program (VUSP), and the Faculty Research Program (FRP) awarded by the International Council for Canadian Studies (ICCS) for the research project entitled “Cross-Regional Income Inequality in Canada and Italy: Issues and Evidence.”

The nature, the volume, and the extent of Francesca’s scientific work are most remarkable. The field of inequality measurement, with which I am most familiar, offers a number of interesting aspects for new statistical methodologies: recent changes in societal and cultural

settings urge to develop appropriate tools to provide new nuances and depth to understanding how incomes are nowadays distributed. Francesca has contributed immensely to the derivation of statistical inference and various limit theorems for different statistical indices, including the challenging case of heavy-tailed distributions, which require particularly delicate analytical assessments based on empirical and quantile processes, which is a particularly challenging area of research.

In addition to this line of research, Francesca has also contributed extensively to the literature on mixture models, and published innovative methodologies on robust classification. She provided open-source software packages for their implementation and usage, and developed data analyses in fields such as food authenticity, metagenomics, and chemometrics. A very impressive body of work, indeed.

Francesca has also made significant contributions through her editorial and review work. She acts as an Associate Editor for Statistics and Computing. She is on the editorial boards, or has been a guest editor for special issues, for 12 other journals, with Statistical Analysis and Data Mining being among them. Francesca has had an intense reviewing activity for about 40 leading scientific journals, and has been recognized for her expertise through the appointment as a reviewer for research applications submitted to the Research Foundation – Flanders, and Discovery Grants for the Natural Sciences and Engineering Research Council (NSERC) of Canada since 2011.

Francesca has been a speaker at 50 seminars and international conferences, giving plenary talks in 8 of them. Francesca has been the chair, discussant, and organizer of several invited sessions, a member of organizing committees, and the chair the 11th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society in Milan, Italy. She has been a member of the scientific program committees of many conferences, such as the International Conference on Statistics in Flint, Michigan, USA, under the title “Flint: One City, One Hundred Years Under Variability,” which was sponsored by the American Statistical Society. She organized the ClaDAG III International School on Classification and Data Analysis, entitled “Robust Statistics: Foundations and Recent Developments,” and gave lectures, jointly with Anthony Atkinson (London School of Economics, UK), Agustin Mayo-Iscar (University of Valladolid, ES), and Marco Riani (University of Parma, IT). The one-week residential school for Master’s and PhD students, as well as for postdocs, all coming from all over the world, took place at the Lake Como School of Advanced Studies in 2022 <https://rsfd.lakecomoschool.org/>.

Francesca was a visiting professor at the University of Lille, France, invited by Professor Christophe Biernacki (Scientific Deputy, INRIA Lille); at the University of Lodz, Poland, invited by Professor Alina Jędrzejczak (Head of the Department of Statistical Methods); at the University of Queensland, Australia, invited by Professor Geoffrey McLachlan, where Francesca was awarded the most prestigious Ethel Raybould Grant; at the Laboratoire Paul Painlevé of the University of Lille 1, France, invited by Professor Youri Davydov; at the University of Valladolid, Spain, invited by Professor Luis Angel García-Escudero; and at Western University, Canada, invited by me.

Francesca very much likes teaching, and has given numerous courses at all levels, ranging from undergraduate to PhD, and beyond. To mention some of them, she taught courses on Computational Statistics, Random Variables and Their Transformations, and Statistical Inference. She is currently teaching Statistical Modeling for PhD students at the

University of Milano-Bicocca.

Francesca has a strong commitment to supporting and mentoring students, and has always been willing to go above and beyond when helping them to succeed. In particular, among the 9 PhD students she has supervised, I want to single out the remarkable scientific work done under Francesca's guidance by Andrea Cappozzo, who is currently an Assistant Professor at Politecnico di Milano.

Francesca's departmental administrative responsibilities and the university-level administrative work are very much noticeable. She has served as a member of various committees and working groups, including the Commission for International Programmes and Mobility, the Inter-University working group for the establishment of two Master's degree courses on Artificial Intelligence, and the Group on Gender Studies of the Milano-Bicocca University.

In addition to her professional achievements, Francesca is a dedicated and compassionate colleague, which was clearly visible to me during my visits at the University of Milano-Bicocca.

Given her extensive experience and accomplishments, I have no doubt that Francesca Greselin is a superb candidate for the position of Full Professor. She brings a wealth of knowledge and expertise, and has an impeccable record of building international networks. I have no doubts whatsoever that she will make many valuable contributions to your Institution.

If you have any questions, or would like additional information, please do not hesitate to contact me.

Sincerely,

Ričardas Zitikis



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To whom it may concern,

It is my pleasure to write this letter of recommendation on behalf of Francesca Greselin, who is applying for a promotion to the rank of Full Professor at your institution. As a Full Professor in the Department of Statistics and Operation Research at Universidad de Valladolid, I had the opportunity to meet Francesca at a conference in London in December 2011. Sharing common research interests, we have enjoyed a productive scientific collaboration ever since, seeing each other frequently at numerous scientific meetings. Consequently, I have had the pleasure of working closely with Francesca and have come to know her as a highly distinguished and talented scholar with a wide range of expertise.

Francesca's research focuses on various topics in statistical methodology, including model-based clustering and classification, theoretical issues in the analysis of economic and gender inequalities, and computational statistics problems related to incomplete information and the use of restrictions. She has achieved international recognition for her contributions to these fields, making valuable proposals and extending previous work. For example, in model-based clustering and classification, her research has addressed non-trivial problems related to deviations from standard assumptions, including asymmetry, heavy tails, robustness against outliers, incorporation of partial information, correction of mislabeled units, and treatment of high dimensionality. She also entered the crucial debate about providing semi-automatic procedures for assessing the percentage of outlying units in a multivariate dataset and for suggesting sound hyperparameter values for complex statistical modeling. These are central topics in modern data science, and Francesca's work has significantly impacted the field.



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I would like to highlight her many connections with leading researchers in the abovementioned domains. She has made visits and maintains close collaborations with the most relevant research teams at an international level. Her numerous joint publications with leading researchers, as well as her participation in collaborative grants and research projects, highlight her strong ability to build and maintain international relationships. To provide an example, Francesca is currently collaborating with researchers Marc Hallin, Jean Michel-Loubes, and Marco Riani on our three-year research grant funded by the Spanish Government, which focuses on the statistical analysis of complex data sets. Francesca's publications appear in top-level peer-reviewed scientific journals, such as *Statistics and Computing*, *Advances in Data Analysis and Classification*, *Computational Statistics and Data Analysis*, *Econometrics*, *The American Statistician*, or a recently accepted paper in the *Journal of Computational and Graphical Statistics*.

Francesca's participation in the most significant international events in these fields is remarkable. She has given talks at numerous internationally renowned conferences on her research topics and has actively contributed to their organization, frequently serving on Scientific and Organizing committees.

Francesca has also made significant contributions to the university community, serving in various institutional positions, and contributing to departmental and university-wide service efforts. She has held leadership roles within professional societies, including serving as the Vice-President of the Classification and Data Analysis Group (ClaDAG) of the Italian Statistical Society (SIS) and as the President-Elect for 2023-2025. She is also an Associate Editor of the journal *Statistics and Computing* and a member of the editorial boards of various other international journals.

In addition to her research accomplishments, Francesca has also excelled in teaching and mentorship. She has taught introductory courses of statistics for bachelor and more advanced topics like analysis of complex data and statistical learning techniques, with statistical software for data analysis, up to the level of PhD courses. She has supervised several PhD students, resulting in numerous high-quality publications. I have had the opportunity to work with Andrea Capozzo, one of these supervised students, and have seen firsthand how Francesca's careful



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mentoring has successfully transmitted excellent know-how, enthusiasm, and motivation to Andrea.

Regarding her character and personality, working with her on research projects is a pleasure. She is a committed and tireless worker, always willing to go the extra mile to ensure the success of a project.

In conclusion, I wholeheartedly recommend Francesca for the position of Full Professor. She is an outstanding scholar with a track record of success in research, teaching, and service, and I am confident that she would thrive in this role and make significant contributions to your institution.

Please don't hesitate to contact me at [lagarcia@uva.es](mailto:lagarcia@uva.es) if you should require any additional information.

GARCIA  
ESCUDERO,  
LUIS ANGEL  
(AUTENTICACIÓN)

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+01'00'

Valladolid, July 15th 2022

Date 

January, 3rd, 2024
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Place 

Milan
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