

## CURRICULUM VITAE

# FRANCESCA GRESELIN

DEPARTMENT OF STATISTICS AND QUANTITATIVE METHODS  
UNIVERSITY OF MILANO BICOCCA  
20126 MILAN, ITALY

TEL: +39 2 6448 3118 [OFFICE]  
FAX: +39 2 6448 3105 [DEPARTMENT]  
EMAIL: [FRANCESCA.GRESELIN@UNIMIB.IT](mailto:FRANCESCA.GRESELIN@UNIMIB.IT)  
ORCID ID [ORCID.ORG/0000-0003-2929-1748](https://orcid.org/0000-0003-2929-1748)  
SCOPUS AUTHOR ID: 25936155400  
RESEARCHERID: A-8770-2015

## EDUCATION

Laurea in Mathematics (with honours), University of Trento (Italy), 1978-1983.  
Thesis advisor: Prof. M. Miranda  
Thesis title: The isoperimetric property of the  $n$ -dimensional sphere (Italian).

## POSITIONS HELD

2019, National Scientific Qualification (ASN) for permanent positions of Full Professor in Italian Universities.  
2005 to present, Associate Professor of Statistics, University of Milano Bicocca (Italy).  
1998 to 2005, Assistant Professor of Statistics, University of Milano Bicocca (Italy).  
1992 to 1997, Independent Consultant.  
1986 to 1991, Visiting Professor, University of Asunción (Paraguay), member of a cooperation project, granted by the Italian Ministry of Foreign Affairs, for the development of the academic curricula of Software Engineering and Electronic Engineering in the Faculty of Science and Technology.  
1983 to 1986, Researcher, at Telettra R&D, an Italian Telecommunication Company.

## PERSONAL DATA

Born in Milan (Italy). Italian Citizenship.

## LANGUAGES

Italian (native), English, Spanish, French.

## RESEARCH INTERESTS

- Mixture Models within the classification framework, by Gaussian,  $t$ -mixtures, skew distributions and mixtures of factor analyzers; with emphasis on theoretical properties of the robust estimation, using trimming and constraints.
- Economic inequality, focusing on inequality measures, their properties, statistical inference, limit theorems and applications.
- Computational Statistics: algorithms, for the maximum likelihood estimation in presence of incomplete data (as the EM), under constraints (patterned covariance matrices), for robust estimation and for sampling from huge sample spaces, by

complete enumeration (Fréchet class for association measures) or by Markov chains (Partial order sets and their linear extensions).

#### VISITING POSITIONS, HONORS AND GRANTS

- 2018 Short Visiting at Laboratoire Paul Painlevé, University of Lille 1, Lille (France), invited by Christophe Biernacki, Scientific Deputy at INRIA Lille, and Scientific Head of the MODAL team, granted by an Erasmus 2018 Grant of the University of Milano Bicocca.
- 2016 Short Visiting at the University of Lodz, Lodz (Poland), invited by Alina Jedrzejczak, head of Department of Statistical Methods, granted by an Erasmus 2016 Grant of the University of Milano Bicocca.
- 2016 Visiting Scholar at the University of Queensland, Brisbane (Australia), awarded by the Ethel Raybould Grant from the University of Queensland.
- 2015 Short Visiting at Laboratoire Paul Painlevé, University of Lille 1, Lille (France), invited by Youri Davydov, granted by an Erasmus 2015 Grant of the University of Milano Bicocca.
- 2014 Short Visiting at GIR de Probabilidad y Estadística Matemática, University of Valladolid, Valladolid (Spain) granted by an Erasmus 2014 Grant of the University of Milano Bicocca.
- 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 (Completion: 2012) awarded by the Office of the Vice-President (Research and International Relations), University of Western Ontario, London, Ontario (Canada) (R. Zitikis, Principal Investigator).
- 2011 Recipient of the designation as “Western Fellow” at the University of Western Ontario, London (Canada).

#### INVITED SEMINARS

- 2018-10-25 Invited Seminar at 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 Invited 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 Invited Lecturer at the Department of Statistical Methods, University of Lodz, Lodz (Polonia). Title of the talks: *Inequality Measures and their properties.*

- 2015-11-18 Invited Lecturer 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 Invited Lecturer at GIR de Probabilidad y Estadística Matemática, University of Valladolid, Valladolid (Spain). Title of the talks: *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 Invited 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 Invited 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 Invited 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 Invited 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 Invited 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*.

#### ORGANIZATION OF SCIENTIFIC CONFERENCES

- Member of the Organizing Committee of SIS2019, the Conference of the Italian Statistical Society Milan, 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. Confirmed 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 23rd International Conference on Computational Statistics COMPSTAT 2018, Iasi, Romania, 28-31 August 2018. Speakers: Christophe Biernacki, Ranjan Maitra, Andrea Cappozzo. <http://www.compstat2018.org/invited.php>
- Chair of the Organizing Committee for the 11th International Meeting of the Classification and Data Analysis Group (of the Italian Statistical Society), Milan (IT), 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 (IT), 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 8-th Scientific Meeting, University of Pavia (Italy), September 2011, <http://archivio.paviauniversitypress.it/pdf-oa/cerchiello-cladag-2011.pdf>

#### MEMBER OF SCIENTIFIC BOARDS AND ADVISORY PANELS

- 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 Program Committee of the “Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena”, Zakopane, May 13-16, 2019.
- Chair 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://cladag2019.unicas.it/>
- Member of the Scientific Council 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/)
- 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 REPRISE 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.

#### INVITED TALKS IN SCIENTIFIC CONFERENCES

- Invited speaker at the 38th Scientific Conference on Multivariate Statistical Analysis, Lodz (Poland), 4-6 November 2019. Title of the talk: *Advances in learning from contaminated datasets.*
- 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, 14-16 December 2019. Title of the talk: *Robust and efficient estimates of partition and model parameters: a step beyond the usual normality assumption.*
- Invited speaker at the Conference “Stochastic Geometry”, Saint-Petersburg <https://www.geometry2019.com/> September 16-20, 2019, sponsored by 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.*
- Invited speaker at the Invited Session “Classification methods in economics and business” at the 16-th Conference of the International Federation of Classification Societies, Thessaloniki (Greece) August 26-29, 2019. Title of the talk: *Fuzzy clustering with skew components, with applications in Economics and Business.*
- Invited speaker at the International Conference on Modelling and Forecasting of Socio-Economic Phenomena, 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 fuzzy clustering for skew socio-economic data*.

- Invited speaker at the 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), 14-16 December 2018, within the session “Supervised and Unsupervised Learning”. Title of the talk: *Extending robust fuzzy clustering to skew data*.
- 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 heterogenous skew data*.
- 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*.
- Invited 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/>
- 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*.
- Invited plenary speaker at the “12-th International Scientific Conference on Modelling and Forecasting of Socio-Economic Phenomena”, dedicated to the memory of Professor Aleksander Zelia, Zakopane (Poland), 8-10 May 2018. Title of the talk: *Robust clustering methods for multivariate socio-economic data*.
- Invited speaker at the 10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017), 16-18 December 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*.
- Invited 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>
- Invited speaker at the Summer Session of the Working Group on Model-Based Clustering, Perugia (Italy), 17-21 July 2017, (details on past workshops: <http://www.stat.washington.edu/raftery/>) Title of the talk: *New developments on robust estimation for mixtures*.  
<http://w3.mi.parisdescartes.fr/cbouveyr/WGMBC17.html>
- Invited speaker at the ISI 2017 World Congress, Marrakech (Marocco), 16-21 July 2017. Session “State of the art and advances in modern empirical process theory in welfare analysis” (declined due to overlapping with previous item).

- 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*.  
<http://cmstatistics.org/CMStatistics2016/organized.php>
- Invited speaker at the Conference on Multivariate Statistical Analysis MSA 2016, Lodz (Poland), November 6-9, 2016. Title of the talk: *Parsimonious and robust clustering*.
- Invited speaker in the Session “Robust statistics”, Soft Methods in Probability and Statistics SMPS2016, Rome (Italy), September 12-14, 2016. Title of the talk: *Fuzzy clustering through robust Factor Analyzers*.
- 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*.
- Invited speaker at the 22nd International Conference on Computational Statistics COMPSTAT 2016, Oviedo (Spain), 23-27 August 2016, in the Session “CI083: Recent developments in mixture models”. Title of the talk: *Robust clustering of multivariate skew data*.
- Invited speaker at 8th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017), 12-14 December 2015, Senate House, University of London, UK, in Specialized Session EO190: “Advances in Mixture modelling”. Title of the talk: *Robust estimation for mixtures of Skew data*, <http://www.cmstatistics.org/CMStatistics2015/fullprogramme.php>
- Invited speaker at the Conference of the International Federation of Classification Societies (IFCS), Bologna, (Italy), 6-8 July 2015, in Session “SP4: Mixture Models: Recent Developments and Applications for Unsupervised and Supervised Classification”. Title of the talk: *The joint role of trimming and constraints in robust estimation for mixtures of skew normal*.
- Invited speaker at the 7th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2014), Pisa (Italy) 6-8 December 2014, in Session “ES89: Robust statistics in R”. Title of the talk: *Robust model estimation, through trimming and constraints, for mixtures of factor analyzers*.
- Invited speaker at the International Conference on Statistics “Flint: one city, one hundred years under variability”, Flint, (Michigan, USA) 23-28 June, 2014. Title of the talk: *Measuring Inequality at the Time of the Great Divergence*.
- Invited speaker at the 47th Scientific Meeting of the Italian Statistical Society, in Solicited Session “SL13 - Computations with Intractable Likelihood”. Title of the talk: *An adaptive method to robustify ML estimation in Cluster Weighted Modeling*, Cagliari (Italy), 11-13 June , 2014,  
<http://meetings.sis-statistica.org/index.php/sm2013/sis2014>

- Invited speaker at 6th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2013), London (UK), 14-16 December 2013, in Session “ES28: Advances in robust data analysis”. Title of the talk: *A robust approach to Cluster Weighted Modeling*.
- Invited speaker at SIS 2013 Statistical conference: Advances in Latent Variables - Methods, Models and Applications, Brescia (Italy), 19-21 June 2013, in the Specialized Session “M1.2: Latent variable models for marketing research”. Title of the talk: *Market segmentation via mixtures of constrained factor analyzers*.
- Invited speaker at AISC 2012, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, 5-7 October 2012, Greensboro, NC (USA), within Session “CEUC 55: Statistical Modeling and Inference in Economics And Insurance” Title of the talk: *Unequal perspectives on inequality: a comparison among the evergreen Gini and the new Zenga indices*.
- Invited speaker at the 45th Annual Conference of the Canadian Economics Association, in Session “New Trends in Measuring Inequality / Mésure des inégalité - Nouvelles tendances”. Title of the talk: *Geographical differences in income inequality: a comparison between Canada and Italy*.  
<https://economics.ca/2011/en/program.php>

#### PARTICIPATION TO PHD SCHOOLS

- Member of the Selection Committee for the Candidates to the XXXVI Cycle 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 (2011-2018).
- 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.

#### PH.D. SUPERVISION

- 2006, L. Pasquazzi, Ph.D. thesis: Asymptotic and Non-Parametric Confidence Intervals for the Gini’s inequality measure, joint supervision with Michele Zenga.



- 2009, C. D’Ariano, Ph.D. thesis: Inferential approaches to a new inequality measure.
- 2020, A. Cappozzo, Ph.D. thesis: Robust model-based classification and clustering: advances in learning from contaminated datasets.
- 2019-, F. Piacenza, Ph.D. thesis: TBA.

#### EDITORIAL ACTIVITIES AND JOURNAL BOARD MEMBERSHIP

- Guest Editor, with Claudio Conversano, Thomas Brendan Murphy and Anna Paganoni, of *Statistical Analysis and Data Mining: The ASA Data Science Journal*, for the CLADAG 2017 Special Issue: *New trends in Complex Data Analysis and Classification* to be issued in 2019.
- Editor, with Laura Deldossi, Luca Bagnato and Maurizio Vichi, of *Statistical Learning of Complex Data*, Springer Series “Studies in Classification, Data Analysis, and Knowledge Organization” ISBN 978-3-030-21140-0, <https://www.springer.com/gp/book/9783030211394>
- 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)
- 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).

#### REFEREEING

Francesca Greselin works as a referee for the following scientific journals:

*Advances in Data Analysis and Classification,*  
*Australian and New Zealand Journal of Statistics,*

*Biometrical Journal,*  
*Colombian Journal of Statistics,*  
*Communications in Statistics - Simulation and Computation,*  
*Communications in Statistics - Theory and Methods,*  
*Computational Statistics and Data Analysis,*  
*Computers and Mathematics with Applications,*  
*Dependence Modeling,*  
*Energy Efficiency,*  
*Journal of Applied Statistics,*  
*Journal of Computational and Graphical Statistics,*  
*Journal of Official Statistics,*  
*Journal of Probability and Statistics,*  
*Journal of Statistical Theory and Practice,*  
*Mathematical Economics,*  
*Metron,*  
*Pattern Recognition,*  
*Review of National Accounts,*  
*REVSTAT Statistical Journal,*  
*Statistica,*  
*Statistical Methods and Applications,*  
*Statistica & Applicazioni,*  
*Statistics and Computing,*  
*Statistics and Probability Letters,*  
*Statistics in Transitions,*  
*Test,*  
*The Canadian Journal of Statistics,*  
*The Journal of Economic Inequality.*

#### SERVICE TO PROFESSION

- Elected member of the Board for International Relations of the University of Milano-Bicocca (elected 09/09/2015).
- Elected person in charge of the Erasmus+ programs for students in Economics and Statistics (outgoing and incoming, elected 12/01/2015).
- Coordinator of the International Relations for the Department of Statistics and Quantitative Methods

#### AFFILIATION TO SCIENTIFIC SOCIETIES

- Italian Statistical Society (SIS);
- Classification and Data Analysis Group of the SIS;
- International Statistical Institute (ISI);
- International Federation of Classification Society (IFCS);
- Classification Society (Formerly the Classification Society of North America, CSNA);
- European Research Consortium for Informatics and Mathematics (ERCIM) Working Group - Computational and Methodological Statistics (CMStatistics) Working Teams: GCS: General Computational Statistics: GMS: General Methodological Statistics; MM: Mixture Models; RACDS: Robust Analysis of Complex Data Sets;
- BiostatEpi Association for Information and Training in Biostatistics and Epidemiology.

#### TEACHING

2014-now Statistical Inference (PhD lectures)

2015-now Risk analysis (graduate course)

2016-now Statistics for Insurance (graduate course)

2005-2013 Random variables and their transformations (PhD lectures)

2008 Mixture Models in R (PhD lectures in Computational Statistics), organized by the University Consortium *Nova Universitas* at Macerata University

1998-2005 Computational Statistics (PhD lectures)

2001-now Statistics for Finance (undergraduate course)

2009-2012 Statistical Inference (undergraduate course)

1999-now Statistics (undergraduate course)

1996-2010 Computational Statistics (postgraduate course)

1986-1987 Programming Languages (undergraduate course)

1987-1989 Compilers (undergraduate course)

1988-1990 Artificial Intelligence (graduate course)

1989-1991 Software Engineering (graduate course)

## RESEARCH PROJECTS WITH PUBLIC FUNDING AND INTERNATIONAL RELATIONSHIPS

2020 Principal investigator in *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:

1. University of Milano-Bicocca, Italy
2. Politecnico di Milano, Italy
3. IdeaTech srl, Italy
4. Universitat Politcnica de Valncia, Spain
5. Aalborg Universitet Copenhagen, Denmark
6. NTT Data Italia SPA, Italy
7. Universidad Autonoma Asuncion, Paraguay
8. Karolinska Institutet, Sweden
9. Altavia Italia, Italy
10. San Raffaele Hospital, Italy
11. Paris Brain Institute, France

2020 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.

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 Principal Investigator in the Research project: “Intervalli di Confidenza per l’indice di Concentrazione di Zenga”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2008-ATE-0089, in collaboration with Leo Pasquazzi. This project motivated to begin a scientific cooperation with Ricardas Zitikis, University of Western Ontario, London (Canada), and generated coauthoring of many papers. The first one is Greselin F., Puri M.L., Zitikis R., 2009, “L-functions, processes, and statistics in measuring economic inequality and actuarial risks”, *Statistics and Its Interface*, 2, 227-245.

2009 Principal Investigator in the Research project: “Distribuzione asintotica di un nuovo indice di disuguaglianza”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2009-ATE-0515, in collaboration with Leo Pasquazzi. This project continued the scientific cooperation with Ricardas Zitikis, University of Western Ontario, London (Canada), leading to the following paper: Greselin F., Pasquazzi L., Zitikis 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.

- 2010 Principal Investigator in the Research project: “Intervalli di confidenza parametrici per gli indici di concentrazione di Gini e di Zenga”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2010-ATE-0375, in collaboration with Leo Pasquazzi. This project continued the scientific cooperation with Ricardas Zitikis, University of Western Ontario, London (Canada), and led to the following paper: Greselin F., Pasquazzi L., Zitikis R., 2012, “Contrasting the Gini and Zenga indices of economic inequality”, *Journal of Applied Statistics*, 40, 2, 282–297.
- 2011 Principal Investigator in the Research project: “Inferenza per il nuovo indice di concentrazione di Zenga, nel caso di distribuzioni con code pesanti”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2011-ATE-0392, in collaboration with Leo Pasquazzi. This project continued the scientific cooperation with Ricardas Zitikis, University of Western Ontario, London (Canada), and produced the paper: Greselin F., Pasquazzi L., Zitikis 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.
- 2013 Principal Investigator in the Research project: “Massimizzazione vincolata della Likelihood per misture di Factor Analyzers e loro applicazioni in ambito economico”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2013-ATE-0592, in collaboration with Leo Pasquazzi. This project motivated to begin a scientific cooperation with Agustin Mayo Iscar, Luis Angel García-Escudero and Alfonso Gordaliza, University of Valladolid (Spain) and generated co-authorship of many papers. The first of them is: García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isca A., 2017 Robust estimation of mixtures of regressions with random covariates, via trimming and constraints, *Statistics and Computing*, 27, 2, 377–402, first online: 03 February 2016, DOI 10.1007/s11222-016-9628-3.
- 2014 Principal Investigator in the Research project: “Stima robusta per modelli mistura Cluster Weighted”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2014-ATE-0514. This project continued the scientific cooperation with Agustin Mayo Iscar, Luis Angel García-Escudero e Alfonso Gordaliza, University of Valladolid (Spain) and led to the following paper: García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isca A., 2016, The joint role of trimming and constraints in robust estimation of Gaussian factor analyzers, *Computational Statistics and Data Analysis*, 99, 131–147.
- 2015 Principal Investigator in the Research project: “Stima Robusta di Misture di Modelli di Analisi Fattoriale”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2015-ATE-0262. This project continued the scientific cooperation with Agustin Mayo Iscar, Luis Angel García-Escudero e Alfonso Gordaliza, University of Valladolid (Spain) and led to the following paper: García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Eigenvalues and constraints in mixture modeling: geometric and computational issues, *Advances in Data Analysis and Classification*, DOI: 10.1007/s11634-017-0293-y.
- 2016 Principal Investigator in the Research project: “Fuzzy Clustering mediante Misture

di Modelli di Analisi Fattoriale”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca. This project continued the scientific cooperation with Agustin Mayo Iscar, Luis Angel García-Escudero e Alfonso Gordaliza, University of Valladolid (Spain) and led to the following paper: García-Escudero L.A., Greselin F., Mayo-Isicar A., Robust fuzzy and parsimonious clustering based on mixtures of Factor Analyzers, *Statistics and Computing*, 27, 2, 377–402.

2017 Coordinator of the scientific project 2017-NAZ-0095, 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). Cariplo Foundation assigned a grant for this purpose, and the event have been developed along the lines of the grant proposal <http://www.cladag2017.unimib.it/youngcladag-2/>

2017 Principal Investigator in the Research project: “Stima Robusta di Misture di Normali asimmetriche”, Grant *Fondo d’Ateneo per la Ricerca* - Università degli Studi di Milano-Bicocca, IRIS code 2017-ATE-0531. This project aims at fostering the scientific cooperation with Agustin Mayo Iscar and Luis Angel García-Escudero University of Valladolid (Spain), and Geoffrey McLachlan of the University of Queensland, Brisbane (Australia) on Mixture modeling for skew data.

# FRANCESCA GRESELIN'S PUBLICATIONS

## SUBMITTED PAPERS

- Denti F., Cappozzo A., and Greselin F., *A Two-Stage Bayesian Nonparametric Model for Novelty Detection with Robust Prior Information*, 2020 (arXiv:1911.08381, submitted)
- Greselin F., Pellegrino S., Vernizzi A., *The Social Welfare Implications of the Zenga Index*, 2020 (arXiv:2006.12623)
- Cappozzo, A., Greselin, F., Murphy, T.B., *Robust variable selection for model-based learning in presence of adulteration*, 2020 (arXiv:2007.14810, submitted)
- Cappozzo, A., Duponchel, L., Greselin, F., Murphy, T.B., *Robust variable selection in the framework of classification with label noise and outliers: applications to spectroscopic data in agri-food*, 2020 (arXiv:2010.10415, submitted)

## PUBLICATIONS IN SCIENTIFIC JOURNALS

1. Davydov Y., Greselin F., 2020, Inferential results for a new inequality curve, *Mathematical Methods of Statistics*, 29, 1 (forthcoming).
2. Greselin F., Jędrzejczak A., 2020+, Analyzing the Gender Gap in Poland and Italy, and by Regions, *International Advances in Economic Research*, accepted for publishing.
3. 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*, accepted for publishing.
4. 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).
5. 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)
6. Greselin F., Piacenza F., Zitikis 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)
7. 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)

8. García-Escudero L.A., Greselin F., Mayo-Isicar 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)
9. Greselin F., Zitikis 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(1), 4, (DOI:10.3390/econometrics6010004; SCOPUS s2.0-85056784458; WOS:000441896200003)
10. García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isicar A., 2018, Eigenvalues and constraints in mixture modeling: geometric and computational issues, *Advances in Data Analysis and Classification*, 12, 2, 203–233. (DOI: 10.1007/s11634-017-0293-y; SCOPUS s2.0-85031941854; WOS:000439171100003)
11. Davydov Y., Greselin F., 2020, Comparisons between poorest and richest to measure inequality, *Sociological Methods and Research*, 49, 2, 526–561. First Published January 9, 2018 (DOI: 10.1177/0049124117747300; SCOPUS s2.0-85081389009; WOS:000526381000008)
12. Giudici, P., Greselin, F., Murphy, T. 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)
13. García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isicar 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)
14. García-Escudero L.A., Gordaliza A., Greselin F., Ingrassia S., Mayo-Isicar 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)
15. 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)
16. 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)
17. 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)
18. Greselin F., Pasquazzi L., Zitikis 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)



19. 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)
20. 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)
21. Greselin F., Pasquazzi L., Zitikis 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)
22. Fattore M., Maggino F., Greselin F., 2011, Socio-economic evaluation with ordinal variables: integrating counting and poset approaches, *Statistica & Applicazioni*, Special Issue: Partial Orders in Applied Sciences, 31-42.
23. 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)
24. Greselin F., Pasquazzi L., Zitikis 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)
25. 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)
26. Greselin F., Puri M.L., Zitikis 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)
27. 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)
28. Greselin F., Pasquazzi L., 2008, Minimum sample sizes in asymptotic confidence intervals for Gini’s inequality measure, *Statistica & Applicazioni*, 6, 2, 99-116; DOI: 10.1400/209607; SCOPUS 2-s2.0-85018266169
29. Greselin F., Maffenini W., 2007, Minimum sample sizes for confidence intervals for Gini’s mean difference: a new approach for their determination, *Statistica & Applicazioni*, 5, 1, 103-122. Permalink: <http://digital.casalini.it/10.1400/209579>; DOI: 10.1400/209579; SCOPUS 2-s2.0-85087416358
30. Greselin F., Zenga M., 2006, Convergence of the Sample Mean Difference to the normal distribution: simulation results, *Statistica & Applicazioni*, 4, 1, 97-120.

31. Greselin F., 2006, Dependence measures based on partial and total orderings, *Statistica & Applicazioni*, 4, 2, 3-25.; SCOPUS 2-s2.0-8508712417
32. Greselin F., Zenga M., Poliscchio M., 2004, The variance of Gini's mean difference and its estimators, *Statistica*, 3, 455-475.
33. Greselin F., Zenga M., 2004, A partial ordering of dependence for contingency tables, *Statistica & Applicazioni*, 2, 53-71.
34. Greselin F., Zenga M., 2004, Partial and total orderings of dependence on tables with given margins, *Quaderni di Statistica*, 6, 129-155 (available at <https://www.labstat.it/home/wp-content/uploads/2015/03/Greselin.pdf>).
35. Greselin F., 2003, Counting and enumerating frequency tables with given margins, *Statistica & Applicazioni*, 1, 2, 87-104; SCOPUS2-s2.0-79952799111
36. Greselin F., 1997, Valutazione approssimata della distorsione dello stimatore  $\hat{R}$  nella distribuzione di Pareto, *Quaderni di Statistica e Matematica Applicata alle Scienze Economico-Sociali*, 19, 3, 269-279.
37. 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.

#### BOOKS AND CURATORSHIPS

38. Cazzaro M., Greselin F., Modelli statistici per l'analisi di problemi economici e finanziari.  
with Mylab platform, eText and online updates, 138 pages, Pearson Italy - Milano, ISBN 9788891903419
39. Greselin F., Mola F., Zenga Ma. Editors, Cladag 2017 Book of Short Papers, eBook, Universitas Studiorum, ISBN: 978-88-99459-71-0, [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)

#### PUBLICATIONS IN VOLUMES WITH ISBN

40. Denti F., Cappozzo A., and Greselin F., *Bayesian nonparametric adaptive classification with robust prior information*. in *Book of short Papers SIS 2020*, Milano: Pearson, 2020, Alessio Pollice, Nicola Salvati e Francesco Schirripa Spagnolo Editors, ISBN 9788891910776
41. Cappozzo A., Greselin F., and Murphy B., *Variable selection for robust model-based learning from contaminated data*. in *Book of short Papers SIS 2020*, Milano: Pearson, 2020, Alessio Pollice, Nicola Salvati e Francesco Schirripa Spagnolo Editors, ISBN 9788891910776
42. 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 Universit di Cassino e del Lazio Meridionale, pp. 104-107. ISBN: 978-88-8317-108-6 [http://cea.unicas.it/e\\_book/Porzio.pdf](http://cea.unicas.it/e_book/Porzio.pdf).

43. Cappozzo, A., Greselin F., Manzi G. 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*. Milano: Pearson, 2019, pp. 737-742. ISBN 9788891915108 <https://it.pearson.com/docenti/universita/partnership/sis.html>.
44. Cappozzo, A., and Greselin F., Detecting wine adulterations employing robust mixture of factor analyzers. In: *Statistical Learning of Complex Data*. Springer Berlin Heidelberg, 2019, pp. 13–21. Springer Series “Studies in Classification, Data Analysis, and Knowledge Organization” ISBN 978-3-030-21140-0, <https://www.springer.com/gp/book/97830302113> SCOPUS 2-s2.0-85072854538.
45. García-Escudero L.A, Greselin F., Mayo-Iscar A., 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.
46. Cappozzo, A., Greselin F., Murphy T., 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, ISBN: 978-9963-2227-3-5
47. García-Escudero L.A, Greselin F., Mayo-Iscar A., Fuzzy clustering of multivariate skew data. In *COMPSTAT 2018 Book of Abstracts*, p. 33, COMPSTAT 2018 and CRoNoS FDA 2018, ISBN: 978-9963-2227-3-5
48. Cappozzo A., Greselin F., Murphy T., Robust Updating Classification Rule with applications in Food Authenticity Studies. In A. Abbruzzo, E. Brentari, M. Chioldi, & D. Piacentino (a cura di), *Book of short Papers SIS 2018*, Pearson, 2018, ISBN: 9788891910233.
49. García-Escudero L.A, Greselin F., Mayo-Iscar A., McLachlan G., 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.
50. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S. and Mayo-Iscar, A. 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.
51. García-Escudero L., Gordaliza A., Greselin F., Mayo-Iscar A., Robust approaches for fuzzy clusterwise regression based on trimming and constraints. *The Mathematics of the Uncertain*, Eduardo Gil, Eva Gil, Juan Gil and María Angeles Gil Editors, Springer Series: Studies in Systems, Decision and Control, vol 142, Springer International Publishing, 2017, ISBN 978-3-319-73847-5.
52. García-Escudero L., Greselin F., Mayo-Iscar A., New proposal for clustering based on trimming and restrictions. *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.

53. Cappozzo A., Greselin F., Wine authenticity assessed via trimming. *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.
54. García-Escudero L., Greselin F., Mayo-Iscar A., Fuzzy Clustering through Robust Factor Analyzers, *Soft Methods for Data Science*, Eds. M.B. Ferraro, P. Giordani, B. Vantaggi, M. Gagolewski, M. Á. Gil, P. Grzegorzewski, and O. Hryniewicz, Springer International Publishing, pp.229-235, 2016, ISBN: 978-3-319-42972-4.
55. García-Escudero L., Greselin F., Mayo-Iscar A., McLachlan G., 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), 2016, ISBN: 9788861970618.
56. García-Escudero L.A, Greselin F., Mayo-Iscar A., McLachlan G., 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.
57. 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, 2016, ISBN: 978-9963-2227-1-1.
58. García-Escudero L., Greselin F., Mayo-Iscar A., McLachlan G., Robust estimation for mixtures of skew data. *Proceedings of the 8th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2015)*, 2015, ISBN: 978-9963-2227-0-4.
59. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Iscar A., Robust estimation for mixtures of Gaussian factor analyzers. *Proceedings of the 8th International Conference of the ERCIM WG on Computing & Statistics (CMStatistics 2015)*, 2015, ISBN: 978-9963-2227-0-4.
60. García-Escudero L., Greselin F., Mayo-Iscar A., *Robust clustering for heterogenous skew data. Book of Abstracts*, 10th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society, CUEC Editrice by Sardinia Novamedia, Cagliari, 2015, ISBN: 978-88-8467-949-9.
61. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Iscar A., 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)*, 2014, ISBN: 978-84-937822-4-5.
62. García-Escudero L., Gordaliza A., Greselin F., Ingrassia S., Mayo-Iscar A., 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), 2014, ISBN 978 88 8467 874 4.

63. Greselin F., Ingrassia S., 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, 2013, ISBN: 978 88 6787 117 9.
64. Greselin F., Ingrassia S., Market segmentation via mixtures of constrained factor analyzers. *Advances in Latent Variables*, Eds. Brentari E., Carpita M., Vita e Pensiero, Milan (Italy) , 8 pages, 2013, ISBN 978 88 343 2556 8.
65. Greselin F., Ingrassia S., 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), 2012, ISBN: 978 84 937822 2 1.
66. Greselin F., Punzo A., 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), 2012, ISBN 978 88 6129 882 8
67. Greselin F., Pasquazzi L., Zitikis R., Capital income inequality: evidences from ECHP data. *Proceedings of the 46th Scientific Meeting of the Italian Statistical Society*, Cleup Eds., Rome (Italy), 2012, ISBN 978 88 6129 882 8
68. Corbett B., Greselin F., Pasquazzi L., Zitikis R., Williams R. 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), 2012, ISBN 978-80-905241-0-1.
69. Bagnato L., Greselin F., 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), 2011, 4 pages, ISBN: 978-88-96764-22-0.
70. Greselin F., Pasquazzi L., Dagum Confidence intervals for inequality measures. *Proceedings of the 45th Scientific Meeting of the Italian Statistical Society*, Cleup Eds., Padua (Italy), 2010, ISBN 978-88-6129-566-7.
71. Greselin F., Pasquazzi L., Zitikis R., 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), 2010, ISBN 978-88-6129-566-7.
72. Greselin F., Ingrassia S., 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, 2010, p. 219-228, DOI 10.1007/978-3-642-01044-6-20.
73. Greselin F., Ingrassia S., Punzo A., Multivariate tests for patterned covariance matrices. *Book of Short Papers of Cladag 2009*, CLEUP Eds., Padova (Italy), 2009, p. 529-532, ISBN 978-88-6129-406-6.
74. Greselin F., Pasquazzi L., Asymptotic Confidence Intervals for a New Inequality Measure. *Proceedings of the 44th Scientific Meeting of the Italian Statistical Society*, Cleup Eds., Padua (Italy), 2008, ISBN 978-88-6129-228-4.

75. Greselin F., Pasquazzi L., 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), 2007, ISBN 978-972-8859-71-8.
76. Greselin F., New results on a partial ordering of dependence. *Classification and Data Analysis*, S. Zani and A. Cerioli editors, MUP ed., Parma (Italy), 2005, p. 377-380, ISBN 978-88-7847-066-8.
77. Greselin F., Zenga M., Measures of association in the Fréchet class. *Proceedings of the 41th Scientific Meeting of the Italian Statistical Society*, Cleup Eds., Milan (Italy), 2002, p. 33-36, ISBN 88-7178-589-4.
78. Greselin F., Bellassai G., Cernuzzi L., Teaching Software Engineering for the development of Paraguay. *Proceedings of the IFIP WG3.4/SEARCC (SRIG on Education and Training)*, Hong Kong, North Holland, 1993, p. 129-134, ISBN 0-444-81597-X.

#### SCIENTIFIC MEETINGS AND WORKSHOPS

1. **Invited speaker** at the Conference Stochastic Geometry, September 16 - 20, 2019 Euler International Mathematical Institute, St. Petersburg, Russia. Title of the talk: *Inferential results for a new inequality curve.*
2. **Invited speaker** at the 16th Conference of the International Federation of Classification Societies 26-29 August 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.*
3. **Invited speaker** at the "13-th International Scientific Conference on Modelling and Forecasting of Socio-Economic Phenomena", dedicated to the memory of Professor Aleksander Zelia, Zakopane (Poland), 13-16 May 2019. Title of the talk: *Robust fuzzy clustering for skew socio-economic data.*
4. **Invited speaker** at the 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), 14-16 December 2018, within the session "Supervised and Unsupervised Learning". Title of the talk: *Extending robust fuzzy clustering to skew data.*
5. 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>
6. **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 heterogenous skew data.*
7. **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.*
8. **Invited 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/>
9. **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.*
10. **Invited Plenary speaker** at the "12-th International Scientific Conference on Modelling and Forecasting of Socio-Economic Phenomena", dedicated to the memory of Professor Aleksander Zelia, Zakopane (Poland), 8-10 May 2018. Title of the talk: *Robust clustering methods for multivariate socio-economic data.*
11. **Invited speaker** at the 10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017), 16-18 December 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*.
12. **Invited 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>
  13. **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>
  14. Speaker at the Classification Society Conference, UC Santa Cruz at the Silicon Valley campus in Santa Clara, Santa Clara (US), June 21-24, 2017. Title of the talk: *Robust parsimonious mixture models for fuzzy clustering*.
  15. **Invited speaker** in the Session “EO115: Mixture models for complex data sets”, 9th International Conference of the ERCIM WG on Computing & Statistics (CM-Statistics 2016), Sevilla (Spain), December 9-11, 2016. Title of the talk: *A fuzzy version of robust mixtures of Gaussian factor analyzers*.
  16. **Invited speaker** at the Conference on Multivariate Statistical Analysis MSA 2016, Lodz (Poland), November 6-9, 2016. Title of the talk: *Parsimonious and robust clustering*.
  17. **Invited speaker** in the Session “Robust statistics”, Soft Methods in Probability and Statistics SMPS2016, Rome (Italy), September 12-14, 2016. Title of the talk: *Fuzzy clustering through robust Factor Analyzers*.
  18. **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*.
  19. **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*.
  20. 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*.
  21. **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*.
  22. 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 heterogenous skew data*.



23. **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.*
24. 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.*
25. **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.*
26. 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.*
27. 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.*
28. **Invited speaker** at the International Conference on Statistics (sponsored by the American Statistical Association), Flint, Michigan (US), June 23-28, 2014. Title of the talk: *Measuring Inequality at the time of the Great Divergence.*
29. **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.*
30. **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.*
31. 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.*
32. Speaker at Arbeitsgruppe Datenanalyse und numerische Klassifikation (AD DANK) and British Classification Society (BCS) Meeting, UCL London, November 8-9, 2013. Title of the talk: *Data driven constraints for Gaussian mixtures of Factor Analyzers: an application to market segmentation.*
33. 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.*

34. I **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*.
35. **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*.
36. 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*.
37. 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*.
38. 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*.
39. 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*.
40. **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*.
41. 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*.
42. 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*.
43. 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*.
44. Speaker at GfKl 2008: 32nd Annual Conference of the German Classification Society, Hamburg (Germany), 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://gflk2008.hsu-hh.de/>

45. Speaker at Sixth 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.*
46. Speaker at 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>
47. Speaker at 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>
48. Speaker at Fifth 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.*
49. Speaker at 41th Scientific Meeting of the Italian Statistical Society, Milan (Italy), 2002. Title of the talk: *Measures of association in the Fréchet class.*
50. Speaker at IFIP WG3.4/SEARCC (SRIG on Education and Training), 1993. Title of the talk: *Teaching Software Engineering for the development of Paraguay.*
51. Speaker at XVII Conferencia Latinoamericana de Informática, Caracas (Venezuela), 1991. Title of the talk: *Creación de la carrera de Ingeniería Informática en la Universidad Católica de Asunción*, published in *Proceedings of the XVII Conferencia Latinoamericana de Informática*, 12 pp.
52. Speaker at XVI Conferencia Latinoamericana de Informática, Asunción (Paraguay), 1990. Title of the talk: *Curriculum in Computer Science and Electronic Engineering*, published in *Proceedings of the XVI Conferencia Latinoamericana de Informática*, 23 pp.
53. Speaker at XVI Conferencia Latinoamericana de Informática, Asunción (Paraguay), 1990. Title of the talk: *Petri nets as Informal Knowledge Engineering solution*, published in *Proceedings of the XVI Conferencia Latinoamericana de Informática*, 459-477.
54. Speaker at XVI Conferencia Latinoamericana de Informática, Asunción (Paraguay), 1990. Title of the talk: *Electroencefalografía con microcomputadora*, published in *Proceedings of the XVI Conferencia Latinoamericana de Informática*, 671-677.
55. Speaker at XIV Conferencia Latinoamericana de Informática, Buenos Aires (Argentina), 1988. Title of the talk: *Hypermedia: nuevas herramientas para el conocimiento*, published in *Proceedings of the XIV Conferencia Latinoamericana de Informática*, Buenos Aires (Argentina), 1988, 13 pp.

56. Speaker at XIII Conferencia Latinoamericana de Informática, Bogotá (Colombia), 1987. Title of the talk: *Los conjuntos difusos en la modelización lingüística*, published in *Proceedings of the XIII Conferencia Latinoamericana de Informática*, 150-159.