



**PERSONAL
INFORMATION**

Born in Voghera on 6 February 1980
Affiliation: Department of Economics and Management
Via San Felice al Monastero 5
27100, Pavia (Italy)
e-mail: elmanuela.raffinetti@unipv.it

EDUCATION**Bocconi University, Milan (Italy)**

* Ph.D. in Statistics, 19 May 2011

- Dissertation : *Multivariate Dependence Measures through Lorenz Curves and their Generalization*
- Topic : dependence analysis and model selection methods
- Supervisor: Prof. Paolo Giudici

University of Pavia (Italy)

* II Level International Master “*Methods for Management of Complex Systems*”, Istituto Universitario di Studi Superiori of Pavia (IUSS), 13 December 2006

- Stage at FMR (Financial and Mathematical Research) Consulting (Voghera, Italy)
- Dissertation : *A description of Delta-Vega-Gamma Methodology*
- Topic : development of novel approaches for the treatment of financial tools
- Supervisor: Prof. Paolo Giudici

* Bachelor of Business Economics (Finance), 18 July 2005

- Dissertation *Metodi statistici Bayesiani per la valutazione di progetti sanitari (Bayesian statistical methods for the assessment of health projects)*
- Topic : development of methodologies based on Bayesian approaches addressed to define the effective associated with health projects in terms of costs/benefits
- Supervisor: Prof. Guido Consonni

**WORK
EXPERIENCE**

* **Assistant Professor of Statistics (Type A Researcher)**, Department of Economics and Management, University of Pavia (Italy) - since 1st October 2021.

- * **Reserach Fellow**, Department of Economics and Management, University of Pavia (Italy) - since 1st January 2021 to 30 September 2021 .
 - Research: *“Statistical analysis of the Coronavirus pandemic socio-economic impacts” - PERISCOPE Project: Pan-European Response to the ImpactS of COVID-19 and future Pandemics and Epidemics (2020-2023)*
 - Scientific Supervisor: Prof. Paolo Giudici
- * **Assistant Professor of Statistics (Type A Researcher)**, Department of Economics, Management and Quantitative Methods, University of Milan (Italy) - since 1st December 2017 to 30 November 2020.
- * **Post-Doc Research Fellow**, Department of Economics, Management and Quantitative Methods, University of Milan (Italy) - since 1st January 2012 to 31 August 2016.
 - Project co-founded by the Lombardy region and the University of Milan (2012-2015)
 - Research: *“Models and methods for the treatment of categorical data and the analysis of phenomena non-directly observable (Evaluating the dependence relationships and the model performance in a quali-quantitative context: the case of categorical data)”*
 - Scientific Supervisor: Prof. Pier Alda Ferrari
- * **Research Fellow**, Department of Economics, Statistics and Law, University of Pavia (Italy) - since 1st November 2010 to 31 December 2011.
 - Research: *“Quantitative methods for quality and risk measurement in financial and educational contexts” - P.R.I.N. 2008 Project*
 - Scientific Supervisor: Prof. Paolo Giudici
- * **Research Fellow**, Department of Statistics and Applied Economics “L. Lenti”, University of Pavia (Italy) - since 1st September 2009 to 31 October 2010.
 - Research: *“Statistical Methods to evaluate risks and quality” - MUSING Project*
 - Scientific Supervisor: Prof. Paolo Giudici

ACADEMIC
QUALIFICATIONS

- * **National Scientific Qualification of Associate Professor in SECS-S/01 (Statistics)** - since 19 June 2020 to 19 June 2029.

RESEARCH
INTERESTS

Explainable Artificial Intelligence (XAI) methods; Machine Learning model validation methods; assessment of operational and cyber risks; dependence analysis; dependence, concordance and discordance measures; ordinal variable treatment and models for ordinal variables; inferential issues when dealing with dataset of high dimensions; sub-sampling methods; inequality measures in income distributions; assessment of quality and customer satisfaction; assessment of the university and educational systems.

MEMBERSHIP
RESEARCH
PROJECTS

- European Project: “Pan-European Response to the ImpactS of COVID-19 and future Pandemics and Epidemics” (PERISCOPE) 2020-2023, since 1st January 2021
- National project “Report on the Lombardy School Systems”, funded by the Lombardy Region and with the support of the Department of Management Engineering (Polytechnic of Milan), the University of Milan-Bicocca and the National Committee for the Evaluation of the Italian Education Systems (INVALSI), 2011.
- National project P.R.I.N.-2008: “Multivariate Methods for the assessment of quality and risks in academic field”.
- European Project: “MUlti-industry Semantic-based business INtelliGence” (MUS-ING), 2006-2010.

TEACHING

- A.Y. 2021-2022 - Professor of Financial data science (In English), Degree Course in Computer Engineering - Data Science, University of Pavia.
- A.Y. 2019-2020 - Professor of Statistics for Business Decisions, Degree Course in Economics and Management, University of Milan (Italy).
- A.Y. 2018-2019 and A.Y. 2019-2020 - Professor of Economic Statistics, Degree Course in Economics and Management, University of Milan (Italy).
- A.Y. 2017-2018 - Professor of Applied Data Science for Marketing Lab, Master in Data Science for Economics, Business and Finance, University of Milan (Italy).
- A.Y. 2017-2018 - Professor of Statistics for Big Data, Degree Course in Economics and Management, University of Milan (Italy).
- A.Y. 2017-2018 - Teaching Assistant of Statistics (in English), Degree Course in Political Science, University of Milan (Italy).
- A.Y. 2017-2018 - Teaching Assistant of Data Analysis (in English), Degree Course in Firm and Public Communication, University of Milan (Italy).
- A.Y. 2017-2018 - Teaching Assistant of Data Analysis Analisi, Degree Course in Firm and Public Communication, University of Milan (Italy).
- A.Y. 2017-2018 - Tutor of Data Analysis (in English), Degree Course in Firm and Public Communication, University of Milan (Italy).
- A.Y. 2017-2018 - Tutor of Data Analysis, Degree Course in Firm and Public Communication, University of Milan (Italy).
- A.Y. 2016-2017 - Tutor of Statistics, Degree Course in Economics and Management, University of Milan (Italy).
- A.Y. 2016-2017 - Tutor of Statistics, Degree Course in Firm and Public Communication, University of Milan (Italy).
- A.Y. 2012-2013 and A.Y. 2014-2015 - Tutor of Data Analysis, Degree Course in Public Administrations and Policies, University of Milan (Italy).

- A.Y. 2014-2015 - Teaching Assistant of Economic Statistics, Degree Courses of European Economics and Economics and Management, University of Milan (Italy).
- A.Y. 2012-2013 and A.Y. 2013-2014 - Teaching Assistant of Economic Statistics, Degree Course of European Economics, University of Milan (Italy).
- A.Y. 2012-2013 - Tutor of Data Analysis, Degree Course of Globalization Social Science University of Milan (Italy).
- A.Y. 2010-2011 - Teacher of Mathematics, Statistics and Logic seminars for students of the first year of the Political Science Course, University of Pavia (Italy).
- A.Y. 2008-2009 and A.Y. 2009-2010 Teacher of Mathematical Elements seminars for students of the first year of the Political Science Course, University of Pavia (Italy).
- A.Y. 2008-2009 - Teacher of Statistics for the Ph.D. in “Institutions, Administrations and Regional Politics”, University of Pavia (Italy).
- A.Y. 2008-2009 - Teaching Assistant of Statistics, Political Science Faculty, University of Pavia (Italy).
- A.Y. 2008-2009 - Teacher of Statistics for working students, Political Science Faculty, University of Pavia (Italy).
- A.Y. 2005-2006 - Tutor of Data Mining, Economics Faculty, University of Pavia (Italy).
- A.Y. 2004-2005 - WinBUGS Lab for Bayesian Statistics, Economics Faculty, University of Pavia (Italy).

SUPERVISOR OF
THESES

- A.Y. 2019-2020 - Supervisors of 3 theses in the Degree Course of Economics and Management.
- A.Y. 2018-2019 - Supervisors of 6 theses in the Degree Course of Economics and Management.

THIRD MISSION

- Speech on Machine Learning Model validation - AIFIRM Conference “Artificial Intelligence in Risk Management”. The focus was both on the standard Machine Learning Model validation approaches and on the introduction of new validation and predictive accuracy tools developed in the recent personal research. The event was mainly aimed at members of the banking and corporate field.

INSTITUTIONAL
MEMEBERSHIP

- In 2020-2021, member of the Italian Association for Artificial Intelligence.
- Since 2019, member of the Italian Association of Financial Industry Risk Managers (AIFIRM).

- Since 2016 to 2019, ordinary member of the Italian Statistical Society (SIS).
- Since 2014 to 2016, corresponding scholar of the Italian Statistical Society (SIS).
- Since 2009 to 2014, junior scholar of the Italian Statistical Society (SIS).
- Member of the European Network for Business and Industrial Statistics (ENBIS).

TRADING COURSES

- ABS10-2010 Applied Bayesian Statistics School Course: “Bayesian machine learning with biomedical applications”, organized by DEPMQ, University of Pavia (Italy) CNR IMATI of Milan (Italy), with the cooperation of European Academy Bozen (EURAC), Institute of Genetic Medicine, Bolzano (Italy), 11-15 June 2010. Along the course the personal research contribution titled “Lorenz zonoids and dependence measures: a proposal” was presented.
- “Interdisciplinary Approach to Assessment” Course, organized by Nova Universitas Inter-University Consortium, Coordinator: Prof. Piergiorgio Lovaglio (University of Milan-Bicocca (Italy)), Supervisors: Prof. Giorgio Vittadini (University of Milan-Bicocca (Italy)) e Prof. Carlo Natale Lauro (University Federico II of Naples), Milano, 14-18 December 2009.
- Summer School in Statistics and Probability: “Lévy Processes, Theory and Applications”, held by Professor Gennady Samorodnitsky, School of Operations Research and Industrial Engineering, Cornell University, Ithaca (USA) and Dr. Souvik Ghosh, School of Operations Research and Industrial Engineering, Cornell University, Ithaca (USA), Torgnon (Italy), 2-21 July 2007.

AWARDS

Scientific Research Award DEMM 2014 (Department of Economics, Management and Quantitative Methods, University of Milan (Italy)) - Young Researcher Category - Paper: Ferrari P.A., Raffinetti E.: *A Different Approach to Dependence Analysis*. *Multivariate Behavioral Research*, 50(2), pp 248-264 (2015).

EDITORIAL ACTIVITIES

- Associate Editor della rivista “*Frontiers in Artificial Intelligence - Artificial Intelligence in Finance*”.
- Reviewer della rivista “*The Econometrics Journal*”.
- Reviewer della rivista “*IEEE Computational Intelligence Magazine*”.
- Reviewer della rivista “*International Journal of Forecasting*”.
- Reviewer della rivista “*Expert Systems With Applications*”.
- Reviewer della rivista “*Quality and Reliability Engineering International*”.
- Reviewer della rivista “*PLOS ONE*”.
- Reviewer della rivista “*Frontiers in Cardiovascular Medicine*”.
- Reviewer della rivista “*Mathematical Economics*”.

TOPIC EDITOR OF
SPECIAL ISSUES

- Explainable Artificial Intelligence models and methods in Finance and Healthcare - *Frontiers in Artificial Intelligence* (Topic Editors: Emanuela Raffinetti, Fabio Aurelio D’Asaro, Brian Scott Caffo and Artur Garcez).

PUBLICATIONS

- Giudici P., Raffinetti E.: *Cyber risk ordering with rank-based statistical models*, *AStA Advances in Statistical Analysis*, Volume 105, Issue 3, pp 469-484, ISSN: 1863-8171 (Print)/1863-818X (Online), DOI: 10.1007/s10182-020-00387-0 (2021).
- Giudici P., Raffinetti E.: *Explainable AI methods in cyber risk management*, *Quality and Reliability Engineering International*, pp 1-9, ISSN: 0748-8017 (Print)/1099-1638 (Online), DOI: 10.1002/qre.2939 (2021).
- Giudici P., Raffinetti E.: *Shapley-Lorenz eXplainable Artificial Intelligence*, *Expert Systems With Applications*, Volume 167, 114104, ISSN: 0957-4174, DOI: 10.1016/j.eswa.2020.114104 (2021).
- Raffinetti E., Ferrari P.A.: *A dependence measure flow tree through Monte Carlo simulations*, *Quality & Quantity*, Volume 55, Issue 2, 467-496, ISSN: 0033-5177 (Print)/1573-7845 (Online), DOI: 10.1007/s11135-020-01010-9 (2021).
- Giudici P., Raffinetti E.: *Monitoring Covid-19 Policy Interventions*, *Frontiers in Public Health*, Volume 8, Article 438, pp 1-6, ISSN: 2296-2565, DOI: 10.3389/fpubh.2020.00438 (2020).
- Raffinetti E.: *An extended study to measure dependence with grouped-ordinal variables generated by unobserved non-normal variables*, *Communications in Statistics: Case Studies, Data Analysis and Applications*, Volume 6, Issue 4, pp 448-472, ISSN: 2373-7484 (Online), DOI: 10.1080/23737484.2020.1789902 (2020).
- Giudici P., Raffinetti E.: *Lorenz Model Selection*, *Journal of Classification*, Volume 37, Issue 3, pp 754-768, ISSN: 0176-4268 (Print)/1432-1343 (Online), DOI: 10.1007/s00357-019-09358-w (2020).
- Raffinetti E.: *A Note on the Dependence Measurement for Ordinal-Continuous Data*, *Biostatistics and Biometrics Open Access Journal*, Volume 9, Issue 5, pp 129-134, ISSN: 2573-2633, DOI: 10.19080/BBOAJ.2019.09.555775 (2019).
- Agosto A., Raffinetti E.: *Validation of PARX Models for Default Count Prediction*, *Frontiers in Artificial Intelligence*, Volume 2, Article 9, pp 1-7, ISSN: 2624-8212, DOI: 10.3389/frai.2019.00009 (2019).
- Raffinetti E., Aimar F.: *MDC_{go} takes up the association/correlation challenge for grouped ordinal data*, *AStA Advances in Statistical Analysis*, Volume 103, Issue 4, pp 527-561, ISSN: 1863-8171 (Print)/1863-818X (Online), DOI: 10.1007/s10182-018-00341-1 (2019).
- Raffinetti E., Siletti E., Vernizzi A.: *Analyzing the Effects of Negative and Non-negative Values on Income Inequality: Evidence from the Survey of Household Income and Wealth of the Bank of Italy (2012)*, *Social Indicators Research*, Volume 133, Issue 1, pp 185-207, ISSN: 0303-8300 (Print)/1573-0921 (Online), DOI: 10.1007/s11205-016-1354-x (2017).

- Raffinetti E., Aimar F.: Pacchetto in R: ‘GiniWegNeg’, disponibile al sito <https://cran.r-project.org/web/packages/GiniWegNeg/index.html> (2016).
- Raffinetti E., Romeo I.: *Dealing with the biased effects issue when handling huge datasets: the case of INVALSI data*, Journal of Applied Statistics, Volume 42, Issue 12, pp 2554-2570, ISSN: 0266-4763 (Print)/1360-0532 (Online), DOI: 10.1080/02664763.2015.1043867 (2015).
- Raffinetti E., Romeo I.: *EVALUATING SOCIAL TRACKING IN THE PRIMARY SCHOOL: EVIDENCE FROM THE LOMBARDY REGION (ITALY)*, Journal of Applied Quantitative Methods, Volume 10, Issue 1, pp 1-14, ISSN: 1842-4562 (2015).
- Ferrari P.A., Raffinetti E.: *A Different Approach to Dependence Analysis*, Multivariate Behavioral Research, Volume 50, Issue 2, pp 248-264, ISSN: 0027-3171 (Print)/1532-7906 (Online), DOI: 10.1080/00273171.2014.973099 (2015).
- Raffinetti E., Ferrari P.A.: *New Perspectives for the MDC Index in Social Research Fields*, Advances in Statistical Models for Data Analysis, Series: Studies in Classification, Data Analysis, and Knowledge Organization, Editors: Morlini I., Minerva T., Vichi M., pp 211-219, ISSN: 1431-8814, ISBN: 978-3-319-17376-4 (Print)/978-3-319-17377-1 (Online), DOI: 10.1007/978-3-319-17377-1_22, Springer International Publishing Switzerland (2015).
- Raffinetti E., Siletti E., Vernizzi A.: *On the Gini coefficient normalization when attributes with negative values are considered*, Statistical Methods & Applications, Volume 24, Issue 3, pp 507-521, ISSN: 1618-2510 (Print)/1613-981X (Online), DOI: 10.1007/s10260-014-0293-4 (2015).
- Raffinetti E., Ferrari P.A.: *The RCI as a Measure of Monotonic Dependence*, Analysis and Modeling of Complex Data in Behavioral and Social Sciences, Series: Studies in Classification, Data Analysis, and Knowledge Organization, Editors: Vicari D., Okada A., Ragozini G., Weihs C., pp 231-242, ISBN: 978-3-319-06691-2 (Print)/978-3-319-06692-9 (Online), ISSN: 1431-8814, DOI: 10.1007/978-3-319-06692-9_25, Springer International Publishing Switzerland (2014).
- Raffinetti E.: *The Combined Median Rank-Based Gini Index for Customer Satisfaction Analysis*, Statistical Models for Data Analysis, Series: Studies in Classification, Data Analysis, and Knowledge Organization, Editors: Giudici P., Ingrassia S., Vichi M., pp 289-296, ISSN: 1431-8814, ISBN: 978-3-319-00031-2 (Print)/978-3-319-00032-9 (Online), DOI: 10.1007/978-3-319-00032-9_33, Springer International Publishing Switzerland (2013).
- Raffinetti E., Giudici P.: *Lorenz Zonoids and Dependence Measures: A Proposal*, Advances in Theoretical and Applied Statistics, Series: Studies in Theoretical and Applied Statistics, Editors: Torelli N., Pesarin F., Bar-Hen A., pp 51-60, ISSN: 2194-7767 (Print)/2194-7775 (Online), ISBN: 978-3-642-35587-5 (Print)/978-3-642-35588-2 (Online), DOI: 10.1007/978-3-642-35588-2_6, Springer-Verlag Berlin Heidelberg (2013).
- Raffinetti E.: *Capitolo 5 - Il sistema scolastico lombardo nel quadro italiano: un'analisi inter-regionale*, Rapporto sulla scuola in Lombardia. Strumenti di analisi di policy, a cura di T. Agasisti, G. Catalano e G. Vittadini, Guerini e Associati Editore, ISBN: 978-88-6250-468-3 (2013).

Raffinetti E., Romeo I.: *Capitolo 8 - Un'analisi statistica delle determinanti dei risultati degli studenti e delle scuole in Lombardia*, Rapporto sulla scuola in Lombardia. Strumenti di analisi di policy, a cura di T. Agasisti, G. Catalano e G. Vittadini, Guerini e Associati Editore, ISBN: 978-88-6250-468-3 (2013).

Raffinetti E., Giudici P.: *Multivariate Ranks-Based Concordance Indexes*, Advanced Statistical Methods for the Analysis of Large Data-Sets, Series: Studies in Theoretical and Applied Statistics, Editors: Di Ciaccio A., Coli M., Ibanez J.M.A., pp 465-473, ISBN: 978-3-642-21036-5 (Print)/978-3-642-21037-2 (Online), DOI: 10.1007/978-3-642-21037-2_42, Springer-Verlag Berlin Heidelberg (2012).

Giudici P., Raffinetti E.: *On the Gini measure decomposition*, Statistics & Probability Letters, Volume 81, Issue 1, pp 133-139, ISSN: 0167-7152, DOI: 10.1016/j.spl.2010.10.005 (2011).

WORKING PAPERS - SSRN Giudici P., Raffinetti E.: *Shapley-Lorenz decompositions in eXplainable Artificial Intelligence*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3546773.

Bussmann N., Enzmann R., Giudici P., Raffinetti E.: *Shapley Lorenz Values for Artificial Intelligence Risk Management*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3800243.

Giudici P., Raffinetti E.: *A generalised ROC curve*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3883422.

Babei G., Giudici P., Raffinetti E.: *Explainable fintech lending*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3892652.

WORKING PAPERS Giudici P., Raffinetti E.: *A Gini concentration quality measure for ordinal variables*, <http://www-5.unipv.it/webdesed/wp/2011.1.pdf>.

INVITED CONTRIBUTIONS AT CONFERENCES AS SPEAKER

Bussmann N., Enzmann R., Giudici P., Raffinetti E.: *Shapley Lorenz methods for eXplainable artificial intelligence*, Convegno CLADAG 2021 (Classification and Data Analysis Group of the Italian Statistical Society), **Invited contribution to the session “Penalized techniques for data analysis”**, 9-11 September 2021, Florence (Italy) (on line), Book of Abstracts and short papers: “CLADAG 2021 Book of Abstracts and Short papers”, ISSN 2704-601X (Print)/2704-5846 (Online), DOI: 10.36253/978-88-5518-340-6.

Raffinetti E., Giudici P.: *A rank graduation measure to assess predictive accuracy*, CFE-CMStatistics 2019 (Computational and Financial Econometrics-Computational and Methodological Statistics) Conference, **Invited contribution to the session “Predictive accuracy methods” organized by Prof. P. Giudici**, 14-16 December 2019, London (UK), Book of Abstracts: “13th International Conference on Computational and Financial Econometrics (CFE 2019) and 12th International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computational and Methodological Statistics (CMStatistics 2019)”, ISBN: 978-9963-2227-8-0.

Giudici P., Raffinetti, E.: *A rank graduation index to prioritise cyber risks* (Paper), SIS 2019 (Italian Statistical Society) Conference, **Invited contribution to the session**

“Statistical Methods for Cyber Risk” organized by Dr. S. Osmetti, 19-21 June 2019, Milan (Italy), Book of Short Papers: “Smart Statistics for Smart Applications”, ISBN: 978-88-9191-510-8.

Raffinetti E., Ferrari P.A.: *New perspectives for the RDI index in social research fields. Invited contribution to the session “Statistical strategies for assessing and measuring differential behavioural patterns: a new outlook” organized by Prof. F. Crippa*, CLADAG 2013 (Classification and Data Analysis Group of the Italian Statistical Society) Conference, 18-20 September 2013, Modena (Italy), Book of Abstract “CLADAG 2013. 9th Meeting of the Classification and Data Analysis Group”, Cleup-Padova, ISBN: 9788867871179.

PARTICIPATIONS
TO CONFERENCES
AS SPEAKER

Giudici P., Raffinetti E.: *The Shapley-Lorenz decomposition approach to mitigate cyber risks*, SIS 2021 (Italian Statistical Society) Conference, 21-25 June 2021, Pisa (Italy), Book of Short Papers: “Book of short papers - SIS 2021”, Pearson, ISBN: 9788891927361 (on line).

Bussmann N., Enzmann R., Giudici P., Raffinetti E.: *An extension of the Shapley-Lorenz decomposition to risk management*, Big Data and Machine Learning in Finance Conference, 10-11 June 2021, Milan (Italy) (on line).

Agosto A., Giudici P., Raffinetti E.: *A new proposal to improve credit scoring model predictive accuracy*, Data Analytics 2020 Conference, *invited contribution to the session “Predictive accuracy methods” organized by Prof. P. Giudici and Dr. Arianna Agosto*, Proceedings: “DATA ANALYTICS 2020, The Ninth International Conference on Data Analytics”, ISSN: 2308-4464, ISBN: 978-1-61208-816-7, 25-29 October 2020, Nice (France) (on line).

Giudici P., Raffinetti, E.: *Lorenz zonoid measures to compare predictive accuracy*, IFABS 2019 (International Finance and Banking Society) Conference, 27-29 June 2019, Angers (France).

Giudici P., Raffinetti, E.: *A rank-based measure to prioritise cyber risks* (Abstract), Euro 2019 (European Conference on Operational Research) Conference, 24-26 June 2019, Dublin (Ireland).

Raffinetti E., Aimar F.: *Latest frontiers in grouped-ordinal data dependence analysis* (Abstract and Paper), ASMDA 2019 (Applied Stochastic Models and Data Analysis) Conference, 11-14 June 2019, Florence (Italy), ISAST: International Society for the Advancement of Science and Technology, ISBN: 978-618-5180-32-4.

Raffinetti E., Siletti E., Vernizzi A.: *Inequality measures and the issue of negative income*, SIS 2014 (Italian Statistical Society) Conference, 11-13 June 2014, Cagliari (Italy), Book of Short Papers: “SIS 2014, 47th Scientific Meeting of the Italian Statistical Society”, CUEC (Cooperativa Universitaria Editrice Cagliariitana), ISBN: 978-88-8467-874-4.

Ferrari P.A., Raffinetti E.: *An extension and a new interpretation of the Rank-based Concordance Index*, JSC-CLADAG 2012 (Japanese Classification Society-Classification and Data Analysis Group of the Italian Statistical Society) Conference, 3-4 September 2012, Anacapri (Italy), Book of Short Papers: “Analysis and modeling of complex data in behavioural and social sciences”, Cleup-Padova, ISBN: 978-88-6129-916-0.

Raffinetti E.: *Ordinal Lorenz Regression with application in Customer Satisfaction Surveys*, SIS 2012 (Italian Statistical Society) Conference, 20-22 June 2012, Rome (Italy), Book of Short Papers: “SIS 2012, Proceedings of the XLVI Scientific Meeting”, ISBN: 979-88-6129-882-8.

Raffinetti E., Romeo I.: *The significance effects problem for administrative data: a novel statistical approach*, SMTDA 2012 (Stochastic Modeling Techniques and Data Analysis) Conference, 5-9 June 2012, Chania (Crete), Proceedings: “2nd Stochastic Modeling Techniques and Data Analysis International Conference”.

Raffinetti E.: *Multivariate concordance measures: a proposal*, CLADAG 2011 (Classification and Data Analysis Group of the Italian Statistical Society) Conference, 7-9 September 2011, Pavia (Italy), Book of Short Papers: “CLADAG 2011, Classification and Data Analysis”, Pavia University Press, “Editoria scientifica” series, ISBN: 978-88-906639.

Giudici P., Raffinetti E.: *Model selection based on Lorenz zonoids*, ASMDA 2011 (Applied Stochastic Models and Data Analysis) Conference, 7-10 June 2011, Rome (Italy), Proceedings: “ASMDA 2011”, ETS Editions, ISBN 97888467-3045-9.

Giudici P., Raffinetti E.: *A new proposal to assess evaluation models*, IES 2011 (Innovation and Society) Conference, 30 May - 1st June 2011, Florence (Italy), Book of Abstracts: “Statistical Methods for service evaluation”.

Giudici P., Raffinetti E.: *Gini measure: its decomposition proposal*. Convegno CLADAG 2010 (Classification and Data Analysis Group of the Italian Statistical Society), 8-10 September 2010, Florence (Italy), Book of Abstracts: “GfKI-CLADAG 2010”.

Giudici P., Raffinetti E.: *Lorenz zonoids and dependence measures: a proposal*, SIS 2010 (Italian Statistical Society) Conference, 16-18 June 2010, Padova (Italy), Book of Short Papers: “Proceedings of the 45th Scientific Meeting of the Italian Statistical Society”, ISBN: 978-88-6129-566-7.

Raffinetti E., Giudici P.: *Multivariate Ranks-based concordance indexes*, SIS 2009 (Italian Statistical Society) Conference, 23-25 September 2009, Pescara (Italy), Book of Short Papers: “Statistical Methods for the analysis of large data-sets”, Cleup-Padova, ISBN: 978-88-6129-425-7.

Giudici P., Raffinetti E.: *On dependence measures in a multivariate context*, Convegno CLADAG 2009 (Classification and Data Analysis Group of the Italian Statistical Society) Conference, 9-11 September 2009, Catania (Italy), Book of Short Papers: “CLADAG 2009. Classification and Data Analysis 2009”, Cleup-Padova, ISBN 978-88-6129-406-6.

PARTICIPATION TO
CONFERENCES

Babaei G., Giudici P., Raffinetti E.: *Explainable AI in preprocessing*, ENBIS 2021 (European Network for Business and Industrial Statistics) Conference, 13-15 September 2021 (on line).

Babaei G., Giudici P., Raffinetti E.: *Explainable AI in preprocessing*, Network Models for Financial Contagion and Systemic Risk Conference, 28 May 2021 (on line).

Giudici P., Raffinetti E.: *A novel approach for Artificial Intelligence through Lorenz zonoids and Shapley Values*, (Short Paper), SIS 2020 (Italian Statistical Society) Conference, 22-24 June 2020, Pisa (Italy), Book of Short Papers, ISBN: 978-88-9191-077-6.

- Agosto A., Raffinetti, E.: *Application and validation of dynamic Poisson models to measure credit contagion* (Short Paper), SIS 2019 (Italian Statistical Society) Conference, 19-21 June 2019, Milan (Italy), Book of Short Papers: “Smart Statistics for Smart Applications”, ISBN: 978-88-9191-510-8.
- Bastianin A., Raffinetti, E.: *Revised survival analysis-based models in medical device innovation field* (Abstract), ASMDA 2019 (Applied Stochastic Models and Data Analysis) Conference, 11-14 June 2019, Florence (Italy), ISAST: International Society for the Advancement of Science and Technology, ISBN: 978-618-5180-32-4.
- Raffinetti E., Siletti E., Vernizzi A.: *How to deal with negative values in the calculation of the Gini coefficient* (Abstract), “Statistics for the analysis of judicial, forensic and training phenomena” Conference, 8 September 2015, Padova (Italy).
- Vernizzi A., Monti M.G., Raffinetti E., Siletti E.: *Decomposition of family incomes by income sources, geographical areas and the issue of negative income values. **Contribution invited to the session “Recent developments in inference based on the Lorenz and Gini index of inequality” organized by Prof. F. Greselin***, ERCIM (ERCIM WG on Computational and Methodological Statistics) Conference, 6-8 December 2014, Pisa (Italy), Book of Abstracts, ISBN: 978-84-937822-4-5.
- Romeo I., Raffinetti E.: *School tracking and equality of opportunity in a multilevel perspective*, SIS 2012 (Italian Statistical Society) Conference, 20-22 June 2012, Rome (Italy), Book of Short Papers: “SIS 2012, Proceedings of the XLVI Scientific Meeting”, ISBN: 979-88-6129-882-8.
- Giudici P., Raffinetti E.: *Goodness of fit based on the Lorenz curves: a proposal*(Abstract). ASMDA 2011 (Applied Stochastic Models and Data Analysis) Conference, 7-10 June 2011, Rome (Italy), Proceedings: “ASMDA 2011”, Edizioni ETS, ISBN: 97888467-3045-9.

CHAIR OF
CONFERENCE
SESSIONS

- Session “Statistical models for high dimensional data”, SIS 2021 (Italian Statistical Society) Conference, 21-25 June 2021, Pisa (Italy) (on line).
- Session “Predictive accuracy methods”, CFE-CMStatistics 2019 (Computational and Financial Econometrics-Computational and Methodological Statistics) Conference, 14-16 December 2019, London (UK).
- Session “AI, Blockchain and other tech innovations in Economics and Finance - Stream: Blockchain and Cryptocurrencies: Economic and Financial Challenges”, EURO 2019 “European Conference on Operational Research” Conference, 23-26 June 2019, Dublin (Ireland).
- Contributed Session “Data Analysis - Cluster, Dependence Analysis”, ASMDA 2019 “Applied Stochastic Models and Data Analysis” Conference, 11-14 June 2019, Florence (Italy).
- Contributed Session “Stochastic Models 5”, ASMDA 2011 “Applied Stochastic Models and Data Analysis” Conference, 7-10 June 2011, Rome (Italy).

WORKSHOPS

- Giudici P., Raffinetti E.: *The Shapley-Lorenz decomposition approach to mitigate cyber risks*, EU Fin-Tech Horizon2020 FINAL WORKSHOP RISK MANAGEMENT OF FINANCIAL TECHNOLOGIES, 18 June 2021 (on line).
- Giudici P., Raffinetti E.: *Cyber risk analysis including Explainable AI*, Cyber risk analysis, explainable AI and Crypto Financial Risk meter, SupTech - Session 3, 16 June 2021 (on line).
- Raffinetti E.: *Cyber risk management with rank based models and explainable AI*, Dublin De-Fi and Digital Finance and Financial Services Workshop and Mini-Conference (D³FSC), 29-30 April 2021 (on line).
- Giudici P., Raffinetti E.: *Cyber risk management with rank based models and explainable AI*, Blockchain RegTech Paris, 1st April 2021 (on line).
- Giudici P., Raffinetti E.: *Cyber risk management with rank-based models and explainable AI*, European Conference on Blockchain in Finance FinTech-ho2020 project, 25 March 2021 (on line).
- Giudici P., Raffinetti E.: *Use Case 4: Cyber risk management with rank based models and explainable AI*, FSA Webinar on Blockchain and Cybersecurity, 9-10 March 2021 (on line).
- Giudici P., Raffinetti E.: *Cyber risk management with rank based models and explainable AI*, Banca d'Italia, 1st March 2021 (on line).
- Giudici P., Raffinetti E.: *Use Case B - Explainable machine learning in credit risk management*, Banca d'Italia, 15 February 2021 (on line).
- Giudici P., Raffinetti E.: *Explainable machine learning in credit risk management*, SupTech Workshop II - Big Data Analytics & Artificial Intelligence, 27 January 2021 (on line).
- Giudici P., Raffinetti E.: *Cyber Risk Management with Rank-based Statistical Models and Explainable AI - FIN-TECH Project* On-Line Training Workshop on Finance Sector Security "Recent Advances in Security for the Finance Sector". Cost-Effective Resilience for the Connected Digital Finance Ecosystem. Session 3: Artificial Intelligence for Security in Finance, 14 January 2021 (on line).
- Giudici P., Raffinetti E.: *Explainable machine learning in credit risk management*, SupTech Workshop I - Big Data Analytics & Artificial Intelligence, 25 November 2020 (on line).
- Giudici P., Raffinetti E.: *Global eXplainable Artificial Intelligence measures*. MLDM.IT 2020 WORKSHOP, 25-27 November 2020 (on line).
- Giudici P., Raffinetti E.: *Shapley-Lorenz decompositions in eXplainable Artificial Intelligence*. TAILOR - Foundations of Trustworthy AI - Integrating Learning, Optimization and Reasoning, 4-5 September 2020, Santiago de Compostela (Spain) (on line).
- Raffinetti E.: *Rank-based measures to improve FinTech model selection*. Invited contributions to the Special SupTech I Workshop on Fintech Challenges, 18 November 2019, Pavia (Italy).

Giudici P., Raffinetti E.: *Bayesian statistics, categorical data and data science*. Categorical Data Analysis & Friends, Celebrating Alan Agresti's Italian citizenship, 18 September 2019, Florence (Italy).

Raffinetti E.: *A decision theoretic approach for model selection* (poster). 3rd IMS-ISBA joint meeting: MCMski, Markov chain Monte Carlo in Theory and Practice, 9-11 January 2008, Bormio (Italy).

PARTECIPATION TO SCHOOL AS SPEAKER Giudici P., Raffinetti E.: *AI in the institutional context*. XXXIX Bioengineering School: "AI-enabled health care: from decision support to autonomous robots", 7-10 September 2020, Bressanone (Italy) (on line).

PARTICIPATIONS TO SEMINARS AS SPEAKER Raffinetti E.: *A Rank Graduation Measure to assess Predictive Accuracy*, Department of Economics and Management, University of Pavia (Italy), 29 May 2019.

Raffinetti E.: *New Statistical Perspectives in Customer Satisfaction Survey*, Department of Economical, Business and Statistical Science, University of Milan (Italy), 24 January 2012.

Raffinetti E.: *A novel statistical approach for quality evaluation*, University of Milan-Bicocca (Italy), 5 October 2011.

Raffinetti E.: *Model selection based on Lorenz zonoids*, Department of Economics, Statistics and Law, University of Pavia (Italy), 5 May 2011.

Raffinetti E.: *Measures associated to concordance and dependence: a multivariate extension*, Department of Statistics and Applied Economics "L. Lenti", Facoltà di Scienze Politiche, University of pavia (Italy), 14 May 2009.

Raffinetti E.: *A decision theoretic approach for model selection*, Department of Statistics and Applied Economics "L. Lenti", Facoltà di Scienze Politiche, University of pavia (Italy), 12 December 2007.

COMPUTER SKILLS

- R (advanced);
- SPSS (good);
- WinBUGS (good);
- Suite Microsoft Office.

LANGUAGES

- ENGLISH (B2 Level);
- FRENCH (A2 Level).