

ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n._1_ posto/i di Ricercatore a tempo determinato in tenure track (RTT)

per il settore concorsuale 13/D1 - Statistica,

Settore scientifico-disciplinare SECS-S/01 - Statistica (ora gruppo scientifico-disciplinare 13/STAT-01 - Statistica; settore scientifico disciplinare STAT-01/A- Statistica)

presso il Dipartimento di ECONOMIA , MANAGEMENT E METODI QUANTITATIVI,
(avviso bando pubblicato sulla G.U. n. 49 del 18/06/2024)

Codice concorso 5576

Chiara Masci CURRICULUM VITAE

INFORMAZIONI PERSONALI

COGNOME	MASCI
NOME	CHIARA

RESEARCH STATEMENT

I am **Assistant Professor of Statistics** at MOX - Department of Mathematics of Politecnico di Milano. My track record comprises 17 journal articles, 1 collective book, 1 collective book chapter and 2 R packages under development. I participated both as a speaker and invited speaker in more than 30 national and international conferences, I held 2 short courses as satellite events of international conferences and I took part at numerous funded national and international projects. Throughout my academic journey, my primary research focus has centered on the statistical analysis of **data with hierarchical structures**. Specifically, my expertise lies in **Mixed-Effects Models (MEMs)**, **Tree-based methods**, **Nonparametric statistics**, **Survival analysis**, **Maximum likelihood estimation**, and, more recently, **Cluster-Weighted Models**. My research in methodological statistics is deeply rooted in two key application areas: **Education** and **Health**. The inherent nested structure of data in these domains, such as students within schools or patients within hospitals, necessitates specialized treatment in data exploration, model inference, and prediction. My significant contribution lies in the development of **innovative parametric and non-parametric mixed-effects models**, tailored to handle complex real-world data and to provide insights beyond the reach of existing methods.

During my PhD, I delved into MEMs focusing on the development of **tree-based MEMs** and **MEMs with discrete random effects**. The former integrates regression and classification trees and random forest techniques into MEMs to address non-linearities and variable interactions. The latter enhances classic MEMs by exploring latent patterns at the highest level of data grouping. Subsequently, I extended these frameworks to diverse areas, including **regression**, **classification**, **multivariate responses**, **time-to-event data**, **ordinal data**, **survival models** and **joint models for recurrent and terminal events**, enhancing the theoretical asset and exploring their potential in real-world applications. In recent endeavors, I have bridged multilevel modeling with **cluster-weighted models**, driven by the growing interest in statistics for precision medicine and heterogeneity analysis.

This research has facilitated **collaborations** with colleagues from other departments, with healthcare and education providers and policy makers and with colleagues **across Europe**. Extensive international visiting periods helped the establishment of a vibrant professional network.

My dedication underscores a commitment to **pushing the boundaries of both statistical research and its practical application**. I am focused on advancing statistical methodologies to effectively address complex hierarchical data structures, produce interpretable results and unveil patterns that could distinctly impact the real world.

PRESENT POSITION

September 2020 - present

Assistant Professor (Ricercatore TD Junior, SECS-S/01 L. 240/2010), MOX - Dipartimento di Matematica, Politecnico di Milano, Italy (durata contratto: 3 + 2 anni)

PAST POSITION

December 2018 - August 2020

Postdoc researcher (Assegnista di Ricerca L. 240/2010), MOX - Dipartimento di Matematica, Politecnico di Milano, Italy, Scholarship: "Learning Analytics"

EDUCATION

PhD in Mathematical Models and Methods in Engineering, MOX - Dipartimento di Matematica, Politecnico di Milano, Italia

PhD Thesis title: "Semi-parametric mixed-effects models for assessing public education systems"

Date: 26/02/2019

Laurea (Bachelor + MSc) in Mathematical Engineering, Politecnico di Milano, Italy

Curriculum: Statistics

Thesis title: Bivariate Multilevel Models for the Analysis of Reading and Maths Pupils' Achievements
102/110

Date: 18/12/2014

NATIONAL PROFESSIONAL QUALIFICATION

National Academic Qualification as Associate Professor of Statistics (Abilitazione scientifica nazionale alla funzione di professore universitario di II fascia per il settore concorsuale 13/D1 Statistica, DD 553/2021)"

Date: July 2023

VISITING PERIODS

January 2018 - February 2019

Visiting PhD student (2 months), Department of Medicine, Cambridge University (UK), Topic: Modelling dependence in single-cell RNA-seq data, Hosting scholar: Leonardo Bottolo

February 2017

Visiting PhD student (1 month), Department of Economics and Management, Lancaster University (UK), Topic: Analysis of student and school performance in the OECD-PISA via a machine learning approach, Hosting scholar: Geraint Johnes

January 2017

Visiting scholar (2 weeks) at Department of Economics and Business, Katholieke Universiteit Leuven (BE), Visiting period for EU H2020 EdEN project (<https://cordis.europa.eu/project/id/691676>)

April 2015 - June 2015

Visiting scholar (3 months) at Department of Economics and Business, Katholieke Universiteit Leuven (BE), Topic: The influence of school size and school managerial practices on students' performances, an efficiency analysis, Hosting scholar: Kristof DeWitte

September 2013 - January 2014

Erasmus (1 semester) program at Universidade Nova de Lisboa (PT), One semester exams: Bayesian statistics, Optimization, Technical physics

CONSEGUIMENTO DI PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA (inserire nome e motivazione del premio, data, ente erogatore, ecc.)

September 2018

Award "Highly recommended paper" for the paper "Non-parametric Mixed-effects Models For Unsupervised Classification of Italian Schools", Workshop on Efficiency in Education, Health and other Public Services.

CONFERENCE/WORKSHOP ORGANIZATION

November 2024

Member of the organizing committee of Workshop Math for Health - Dipartimento di Matematica, Politecnico di Milano, <https://www.mate.polimi.it/events/M4H24/>

June 2024

Member of the organizing and scientific committee of Workshop "Gender Balance in Accademia: Sfide e Strategie", Politecnico di Milano

September 2017

Member of the scientific and organizing committee of Young CLADAG - Satellite event of CLADAG conference 2017, Politecnico di Milano, <https://cladag2017.unimib.it/youngcladag-2/>

April 2018

Member of the scientific and organizing committee of StaTalk2018@Polimi, Politecnico di Milano, <https://stataalk2018polimi.github.io/>

REFEREEING ACTIVITY

Referee for International Scientific Journals

Advances in Data Analysis and Classification

Applied Economics

Automatika

European Journal of Operational Research

High Education Quarterly

Italian Journal of Applied Statistics

Journal of Biostatistics

Large-scale Assessments in Education

PLOS ONE

Socio-Economic Planning Science

Statistical Methods & Applications

Referee of MSc theses in

Mathematical Engineering, Politecnico di Milano

SCIENTIFIC PRODUCTION

Pre-prints

Bergonzoli, G.; Rossi, L.; Masci, C. (2024). 'Ordinal Mixed-Effects Random Forest'. arXiv preprint arXiv:2406.03130

Luca, C.; Masci, C.; Cappozzo, A.; Forlani, M.; Antonelli, B.; Leoni, O. and Ieva, F. (2024). 'Uncover mortality patterns and hospital effects in COVID-19 heart failure patients: a novel Multilevel logistic cluster-weighted modeling approach'. arXiv preprint arXiv:2405.11239

Masci, C., Spreafico, M., Ieva, F. (2023). 'Joint modelling of recurrent and terminal events with discretely-distributed non-parametric frailty: application on re-hospitalizations and death in heart failure patients'. arXiv preprint arXiv:2311.04103

Ragni, A.; Masci, C., Ieva, F.; Paganoni, A.M. (2023). 'Clustering Hierarchies via a Semi-Parametric Generalized Linear Mixed Model: a statistical significance-based approach'. arXiv preprint arXiv:2302.12103

Lurani Cernuschi, A.; Masci, C.; Corso, F.; Muccini, C.; Ceccarelli, D.; Galli, L.; Ieva, F.; Paganoni, A.M.; Castagna, A. (2022). 'A neural network approach to survival analysis for modelling time to cardiovascular diseases in HIV patients with longitudinal observations '. MOX-report 85/2022.

Journal articles

Maschi, C.; Ieva, F.; Paganoni, A.M. (2024). 'Inferential Tools for Assessing Dependence Across Response Categories in Multinomial Models with Discrete Random Effects'. *Journal of Classification*, <https://link.springer.com/article/10.1007/s00357-024-09466-2>, 1-29

Ragni, A., Ippolito, D., Maschi, C. (2024). 'Assessing the Impact of Hybrid Teaching on Students' Academic Performance via Multilevel Propensity Score-based techniques'. *Socio-Economic Planning Sciences*, <https://doi.org/10.1016/j.seps.2024.101824>.

Maschi, C., Cannistrà, M., & Mussida, P. (2023). Modelling time-to-dropout via shared frailty Cox models. A trade-off between accurate and early predictions. *Studies in Higher Education*, 1-19.

Bertoletti A., Cannistrà M., Diaz Lema M., Maschi, C., Mergoni A., Rossi L., Soncin M. (2023). 'The Determinants of Mathematics Achievement: A Gender Perspective Using Multilevel Random Forest'. *Economies* 11:32, DOI <https://doi.org/10.3390/economies11020032>.

Maschi, C., Ieva, F. and Paganoni, A.M. (2022). 'Semiparametric multinomial mixed-effects models: a university students profiling tool.' *The Annals of Applied Statistics*, 16 (3): 1608 - 1632.

Fiz, F., Maschi, C., Costa, G., Sollini, M., Chiti, A., Ieva, F., Torzilli, G. & Viganò, L. (2022) 'LPET/CT-based radiomics of mass-forming intrahepatic cholangiocarcinoma improves prediction of pathology data and survival' *European Journal of Nuclear Medicine and Molecular Imaging*, pp 1-14.

Cannistrà M., Maschi, C., Ieva, F., Agasisti T. and Paganoni, A.M. (2021). 'Early-predicting dropout of university students: an application of innovative machine learning and multilevel statistical techniques'. *Studies in Higher Education*, 1-22, DOI:10.1080/03075079.2021.2018415.

Fontana, L., Maschi, C., Ieva, F. and Paganoni, A.M. (2021). 'Performing learning analytics via generalized mixed-effects trees'. *Data*, 6, 74. <https://doi.org/10.3390/data6070074>.

Costa, G., Cavinato, L., Maschi, C. et al. (2021). 'Virtual Biopsy for Diagnosis of Chemotherapy-Associated Liver Injuries and Steatohepatitis: A Combined Radiomic and Clinical Model in Patients with Colorectal Liver Metastases'. *Cancers*, DOI: <https://doi.org/10.3390/cancers13123077>.

Maschi, C., Ieva, F., Agasisti, T. and Paganoni, A.M. (2021). 'Evaluating class and school effects on the joint achievements in different subjects: a bivariate semiparametric mixed-effects model'. *Computational Statistics*, 36(4), 2337-2377.

Pellagatti M., Maschi, C., Ieva, F. and Paganoni, A.M. (2021). 'Generalized mixed-effects random forest: A flexible approach to predict university student dropout'. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 14(3), 241-257.

Maschi, C., Ieva, F. and Paganoni, A.M. (2018). 'Semi-parametric mixed-effects models for unsupervised classification of Italian schools'. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 182.4, pp. 1313-1342.

Schiltz, F., Maschi, C., Agasisti, T. and Horn, D. (2018). 'Using regression tree ensembles to model interaction effects: a graphical approach'. *Applied Economics*, 50(58), pp. 6341-6354.

Maschi, C., Agasisti, T. and Johnes, G. (2018). 'Student and school performance across countries: A machine learning approach'. *European Journal of Operational Research*, 269(3), pp. 1072-1085.

Maschi, C., Ieva, F., Agasisti, T. and Paganoni, A.M. (2017). 'Bivariate multilevel models for the analysis of mathematics and reading pupils' achievements'. *Journal of Applied Statistics* 44.7, pp. 1296-1317.

Maschi, C., De Witte, K. and Agasisti, T. (2016). 'The influence of school size, principal characteristics and school management practices on educational performance: An efficiency analysis of Italian students attending middle schools'. *Socio-Economic Planning Sciences* (61), pp. 52-69.

Maschi, C., Ieva, F., Agasisti, T. and Paganoni, A. M. (2016). 'Does class matter more than school? Evidence from a multilevel statistical analysis on Italian junior secondary school students'. *Socio-Economic Planning Sciences* (54), pp. 47-57.

Books and Books chapters

Maschi, C. (2019). 'Semi-parametric mixed-effects models for assessing public education systems'. Doctoral dissertation, Italy.

Agasisti, T., Ieva, F., Maschi, C., Paganoni, A. M. and Soncin, M. (2017). 'Using Statistical Analytics to Study School Performance through Administrative Datasets'. *Data Analytics Applications in Education*. Auerbach Publications, pp. 183-209.

Ieva, F., Maschi, C. and Paganoni, A.M. (2016). 'Laboratorio di statistica con R. 2/Ed. con MyLab e eText'. Pearson, Ediz. mylab. Con espansione online.

Conference proceedings

Maschi, C., Spreafico, M. and Ieva, F. (2023). 'Joint modelling of hospitalizations and survival in Heart Failure patients: a discrete non parametric frailty approach'. *Book of Short Papers SIS 2023*. Pearson, ISBN 9788891935618AAVV - pp. 375-380.

Ragni, A., Maschi, C., Ieva, F. and Paganoni, A.M. (2023). 'A novel statistical significance based semi-parametric GLMM for clustering countries standing on their innumeracy levels'. *Book of Short Papers SIS 2023*. Pearson, ISBN 9788891935618AAVV - pp. 939-944.

Maschi, C., Ieva, F., Paganoni A.M. (2022). 'Multinomial Multilevel Models with Discrete Random Effects: a Multivariate Clustering Tool.' *IFCS 2022 - Book of Abstract*. p. 154, ISBN: 978-989-98955-9-1, Oporto.

Maschi, C., Giovio, M. and Mussida, P. (2022). 'Survival models for predicting student dropout at university across time '. *Book of Short Papers of Education and New Developments 2022 - Volume I*. inScience Press, ISBN 978-989-53614- 3-4 - pp. 203-207.

Maschi, C., Giovio, M. and Mussida, P. (2022). 'Modelling time to university dropout by means of time-dependent frailty COX PH models '. *Book of Short Papers SIS 2022*. Pearson, ISBN 978-889-19323-1-0 - pp. 1771-1776.

Maschi, C., Ieva, F. and Paganoni, A.M. (2021). 'Multinomial semiparametric mixed-effects model for profiling engineering university students'. *Book of Short Papers SIS 2021*. Pearson, ISBN 9788891927361 - pp. 1481-1486.

F. Ieva, G. Baroni, L. Cavinato, Maschi, C., G. Costa, F. Fiz, A. Chiti and L. Vigano' (2021). 'Virtual biopsy in action: a radiomic-based model for CALI prediction'. *Book of Short Papers SIS 2021*. Pearson, ISBN 9788891927361 - pp. 1438-1443.

Cannistrà M., Agasisti T., Paganoni, A.M. and Maschi, C. (2021). 'How Much Tutoring Activities May Improve Academic Careers of At-Risk Students? An Evaluation Study'. *Book of Short Papers SIS 2021*. Pearson, ISBN 9788891927361 - pp. 318-323.

Maschi, C., Ieva, F., Agasisti, T. and Paganoni, A.M. (2019). 'Bivariate semiparametric mixed-effects models for classifying the effects of Italian classes on multiple student achievements'. *Cladag 2019 Book of Short Papers*. ISBN: 9788883171086.

Masci, C., Ieva, F., Agasisti, T. and Paganoni, A.M. (2019). 'Classification of Italian classes via bivariate semiparametric multilevel models'. Book of Short Papers SIS 2019. Pearson, pp. 971-976.

Masci, C., Agasisti, T., Ieva, F. and Paganoni, A.M. (2018). 'Unsupervised clustering of Italian schools via non-parametric multilevel models'. Book of Short Papers SIS 2018. Pearson, pp. 1-6.

Masci, C., Agasisti, T., Ieva, F. and Paganoni, A.M. (2017). 'Nonparametric mixed-effects model for unsupervised classification in the Italian education system'. Cladag 2017 Book of Short Papers. Universitas Studiorum.

Masci, C., Ieva, F., Agasisti, T. and Paganoni, A. M. (2016). 'Analysis of pupils' INVALSI achievements by means of bivariate multilevel models'. Book of Short Papers SIS 2016. Pearson, pp. 1-6.

TEACHING ACTIVITY

Courses for PhD or Researchers

May 2019

Lecture "How do statistical models explain student learning?" at Comunicare la ricerca scientifica, Phd course at Politecnico di Milano

Postgraduate Master Courses

2023

Data Scientist School Ed. 6-7, MIP - Graduate School of Management Politecnico di Milano, Course for GENERALI

MSc Courses

2022-2024

Lecture "Mixed-effects models" at Applied Statistics, MSc course at Mathematical Engineering, Politecnico di Milano (8 ore)

BSc Courses

2021-2024

Business Data Analytics, BSc course at Mathematical Engineering, Politecnico di Milano, Editions 2021-2022, 2022-2023, 2023-2024 (5 CFU)

Teaching assistant and laboratory sessions

2021-2024

Modelli e Metodi dell'Inferenza statistica, BSc course in Mathematical Engineering, Politecnico di Milano, Teaching assistant and R laboratory, Editions 2020-2021, 2021-2022, 2022-2023, 2023-2024 (10 CFU)

2020

Business Data Analytics, BSc course in Management Engineering, Politecnico di Milano, Teaching assistant and R laboratory, Editions 2020-2021 (5 CFU)

2016-2019

Probability and mathematics statistics, BSc course in Management Engineering, Politecnico di Milano, Teaching assistant, Editions 2016-2017, 2017-2018, 2018-2019, 2019-2020 (10 CFU)

2015-2016

Basics of statistics and biomedical signals, BSc course in Biomedical Engineering, Politecnico di Milano, R laboratory sessions, Editions 2015-2016, 2016-2017 (5 CFU)

2015

Statistics, BSc course in Economic and management, Università degli studi di Milano, Teaching assistant, Editions 2015-2016

Master thesis advisor

2024

Chiara Danesi. Time-varying Cox shared frailty models for the prediction of university students dropout, Ingegneria Matematica - Politecnico di Milano

Alessio Frezza. Algorithmic Improvements for Multilevel Logistic Cluster-Weighted Model Estimation: Development and Evaluation of New Variants, Ingegneria Matematica - Politecnico di Milano

Greta Camplese. Semi-parametric cluster-weighted multilevel models for two-levels clustering, Ingegneria Matematica - Politecnico di Milano

Francesca Pessina. Profiling Healthcare Providers in Lombardia via Semi-Parametric Multilevel Generalized and time-to-event Models, Ingegneria Matematica - Politecnico di Milano

Alessandra Sala. Multilevel Multivariate and Hurdle Models to predict academic short term performance through online admission test, Ingegneria Matematica - Politecnico di Milano

2023

Giulia Bergonzoli. Ordinal Mixed-Effects Random Forest: an innovative statistical method to perform learning analytics, Ingegneria Matematica - Politecnico di Milano

Luca Caldera. Multilevel logistic cluster-weighted model for profiling and clustering of heart failure patients in Lombardy region using administrative database, Ingegneria Matematica - Politecnico di Milano

Giulia Romani. Time-Varying Shared Frailty Cox Models for the Analysis of University Students Dropout, Ingegneria Matematica - Politecnico di Milano

Alessio Tranchida. Multinomial multilevel models for predicting Master students careers at Politecnico di Milano, Ingegneria Matematica - Politecnico di Milano

Davide Lo Piccolo. SpMEMs: an R package for semiparametric mixedeffects models, Ingegneria Matematica - Politecnico di Milano

Daniel Ippolito. Blended teaching evaluation through Multilevel Propensity Score, Ingegneria Matematica - Politecnico di Milano

2022

Mirko Giovio. Survival models for predicting student dropout at university across time, Ingegneria Matematica - Politecnico di Milano

2021

Agostino Lurani. A neural network approach to survival analysis with time-dependent covariates for modelling time to Cardiovascular diseases in HIV patients, Ingegneria Matematica - Politecnico di Milano

Luca Pirazzini. Time-Invariant and Time-Dependent Cox Models for Predicting Student Dropout at University, Ingegneria Matematica - Politecnico di Milano

Master thesis co-advisor

2024

Sofia Moroni. Non-Parametric Survival Learning for Prognostic Modeling Integrating, Ingegneria Matematica - Politecnico di Milano

2023

Lorenzo Angiolini. Model-based clustering of lifetime data with frailties and random covariates for the profiling of COVID-19 heart failure patients, Ingegneria Matematica - Politecnico di Milano

2022

Riccardo Scaramuzza. Joint modelling of hospitalizations and survival in Heart Failure patients: a discrete non parametric frailty approach, Ingegneria Matematica - Politecnico di Milano

2020

Veronica Marino. An Application of Neural Network for Learning Analytics, Ingegneria Matematica - Politecnico di Milano

Andrea Maggioni. Semi-parametric generalized linear mixed effects model: an application to Engineering BSc dropout analysis, Ingegneria Matematica - Politecnico di Milano

2019

Massimo Pellagatti. Generalized Mixed Effects Random Forest for classification: an application to predict university students' dropout, Ingegneria Matematica - Politecnico di Milano

2018

Luca Fontana. Statistical analysis of engineering BSc dropout through mixed effects models, Ingegneria Matematica - Politecnico di Milano

2016

Matteo Rivolta. Metodi di imputazione per dati mancanti : applicazione al dataset INVALSI, Ingegneria Matematica - Politecnico di Milano

Internship students host

2024

Théo Cadene, Engineering student at ENSTA Paris. Traineeship title: Learning Analytics, Erasmus+ program, may 2024-july 2024

2022

Marceau Germe, Engineering student at ENSTA Paris. Traineeship title: Modelling student dropout at Politecnico di Milano in R, Erasmus+ program, may 2022-july 2022

Other Educational Activities

January 2024: One-day course on Machine Learning in Education, LESE conference: Lisbon Economics and Statistics of Education, 17th January 2024

Spring 2022: Statistical Learning - Corsi di orientamento per i licei PNRR, Istituto Scolastico Don Carlo Gnocchi, Carate Brianza (MB); IIS A.Volta, Lodi (LO), Editions 2022-2023

October 2017: One-day course on Machine Learning in Education, 5th Workshop on Efficiency in Education, 17th October 2017

August 2017: Volunteering mathematics teaching in Kibuye Village, Uganda, within the Arise And Shine Uganda (AASU) project, Primary school

2015-2020: Meet me Tonight - Notte dei Ricercatori, Editions 2015, 2016, 2017, 2018, 2019, 2020, Primary school

TALKS AND SEMINARS

Invited seminars

Invited seminar at Department of Economics at Universit`a di Modena e Reggio Emilia (IT), Title: Tree-based mixed-effects models for the assessment of education systems (November 2023)

Invited seminar at MOX, Department of Mathematics, Politecnico di Milano (IT), Title: Semiparametric multinomial mixed-effects models: a university students profiling tool (November 2020)

Invited seminar at Huddersfield Business School at The University of Huddersfield (UK), Title: Regression trees in education: explaining the added value of Hungarian schools in a flexible way (February 2017)

Invited seminar at School of Business and Economics, Maastricht University (NL), Title: Bivariate Multilevel Models for the Analysis of Reading and Maths Pupils' Achievements (May 2015)

Invited talks at Conferences

Invited speaker at XLV Annual Meeting of the Italian Association for Mathematics Applied to Economic and Social Sciences (AMASES), Title: Semiparametric multinomial multilevel models for predicting higher education dropout, On-line (September 2021)

Invited speaker at 31st European Conference on Operational Research, Title: Profiling university students through an innovative semiparametric mixed-effects multinomial model, Athens (EL) (July 2021)

Invited speaker at ERCIM 2020 - CMStatistics 2020, Title: Semiparametric multinomial mixed-effects linear models - An EM algorithm for predicting student dropout, On-line - London (UK) (December 2020)

Invited speaker at CLADAG 2019 - Classification and Data Analysis Group, Title: Bivariate semi-parametric mixed-effects models for classifying the effects of Italian classes on multiple student achievements, Cassino (IT) (September 2019)

Talks at Conferences

Italian Statistical Society (SIS) Conference 2024, Title: Model-based clustering of nested lifetime data: profiling COVID-19 heart failure patients, Bari(IT) (June 2024)

LESE - Lisbon Economics and Statistics of Education, Title: Time-Varying Shared Frailty Cox Models for the Analysis of University Students Dropout, Lisbon (PT) (January 2024)

Italian Statistical Society (SIS) Conference 2023, Title: Joint modelling of hospitalizations and survival in Heart Failure patients: a discrete non parametric frailty approach, Ancona (IT) (June 2023)

8th LEER Conference on Education Economics, Title: Modelling time-to dropout via Shared Frailty Cox Models: a trade-off between accurate and early predictions, Leuven (BE) (March 2023)

IFCS 2022 - Classification and Data Science in the Digital Age, Title: Multinomial multilevel models with discrete random effects: a multivariate clustering tool, July 2022, Oporto (PT) (July 2022)

Italian Statistical Society (SIS) Conference 2022, Title: Modelling time to university dropout by means of time-dependent frailty COX models, Caserta (IT) (June 2022)

END - Education and New Developments 2022, Title: Survival models for predicting student dropout at university across time, Madeira (PT) (June 2022)

LESE - Lisbon Economics and Statistics of Education, Title: Time-dependent frailty COX models for predicting student dropout at university, Lisbon (PT) (January 2022)

Italian Statistical Society (SIS) Conference 2021, Title: Multinomial semiparametric mixed-effects model for profiling engineering university students, On-line - PISA (IT) (June 2021)

7th International Workshop on Efficiency in Education, Health and other Public Services, Title: Performing Learning Analytics via Generalized Mixed-Effects Trees, Barcelona (SP) (September 2019)

European Meeting of Statisticians (EMS) 2019, Title: Evaluating class effects on the joint student achievements in different subjects: a bivariate semi-parametric mixed-effects model, Palermo (IT) (July 2019)

Italian Statistical Society (SIS) Conference 2019, Title: Classification of Italian classes via bivariate semiparametric multilevel models, Milan (IT) (June 2019)

Workshop on Efficiency in Education, Title: Analysis of university students dropout via Generalized Mixed-Effects Trees, Leuven (BE) (April 2019)

LESE - 5th Lisbon Research Workshop on Economics, Statistics and Econometrics of Education, Title: Performing Learning Analytics via Generalized Mixed-Effects Trees, Lisbon (PT) (January 2019)

International Conference on Education Economics, Title: Bivariate semiparametric mixed-effects models for classification of Italian classes, Budapest (HU) (November 2018)

Workshop on Efficiency in Education, Health and other Public Services, Title: EM algorithm for non parametric mixed-effects models. An application to INVALSI data for unsupervised classification of schools, Huddersfield (UK) (September 2018)

Italian Statistical Society (SIS) Conference 2018, Title: Unsupervised clustering of Italian schools via non-parametric multilevel models, Palermo (IT) (June 2018)

International Society for Nonparametric Statistics (ISNPS) Conference 2018, Title: EM algorithm for non-parametric mixed-effects models. An application to INVALSI data for unsupervised classification of schools, Salerno (IT) (June 2018)

Workshop on Efficiency in Education, Title: Non-parametric mixed-effects model for unsupervised classification of Italian schools, Leuven (BE) (March 2018)

Il seminario “I dati INVALSI: uno strumento per la ricerca”, Title: Bivariate multilevel models for the analysis of pupils achievements, Firenze (IT) (November 2017)

Workshop on Efficiency in Education, Title: Using Machine Learning to Model Interaction Effects in Education: a Graphical Approach, Budapest (HU) (October 2017)

CLADAG 2017 - Classification and Data Analysis Group, Title: Non parametric mixed-effects model for unsupervised classification in the Italian education system, Milan (IT) (September 2017)

Italian Statistical Society (SIS) Conference 2017, Title: Student and school performance in the OECD - a Machine learning approach, Florence (IT) (June 2017)

LEER workshop on Education Economics, Title: A flexible analysis of PISA 2015 data across countries, by means of Multilevel Trees and Boosting, Leuven (BE) (March 2017)

Fourth Lisbon Research workshop, Economics, Statistics and Econometrics of Education, Title: Explaining school value-added in a flexible way: An application of regression trees, Lisbon (PT) (January 2017)

Workshop on Efficiency in Education, Title: Seeing the forest for the trees. Explaining the added value of schools using a flexible approach, Milan (IT) (June 2016)

Italian Statistical Society (SIS) Conference 2016, Title: Analysis of pupils' INVALSI achievements by means of bivariate multilevel models, Salerno (IT) (June 2016)

Workshop on Efficiency in Education, Title: The influence of school size and school managerial practices on students' performances: an efficiency analysis, Leuven (BE) (November 2015)

LECCEWEPA 2015 - Workshop on the Econometrics and Statistics of Efficiency Analysis: Recent Developments and Perspectives, Title: Bivariate multilevel models for the analysis of mathematics and reading pupils' achievements, Lecce (IT) (June 2015)

RESEARCH PROJECTS

Research Project funded by Competitive Research Grants

2015-2018

FARB - Research on Health and Education systems Assessment using administrative Data, <http://www.head.polimi.it/>, Role: participant, Funding agency: Politecnico di Milano, Partner: Department of Management, Economics, Industrial Engineering (DIG) of Politecnico di Milano

2016-2018

Education Economics Network (EdEN) - H2020, <https://cordis.europa.eu/project/id/691676>, Role: participant, Funding agency: EU, Partners: Politecnico di Milano (DMAT and DIG), Katholieke Universiteit Leuven, Maastricht University, University of Budapest

Research Projects funded by Private Companies and Public Institutions

2023-ongoing

ENHANCE-HEART: Efficacy evaluation of the therapeutic-care pathways, of the healthcare providers effects and of the risk stratification in patients suffering from HEART failure, Role: participant, Contractor: Regione Lombardia, Partner: Politecnico di Milano

2021

Cardiovascular disease events in HIV patients, Role: participant, Contractor: Ospedale San Raffaele

2020-2021

LIVMETRAD - LIVRAD1: Image mining analyses of tumor and of liver-tumor interface in patients with colorectal liver metastases., Role: participant, Contractor: Humanitas

2019-2020

PiacenzaOrienta - High school dropout prevention, <https://www.piacenzafuturo.com/rete-piacenzaorienta>, Role: participant, Funding agency; PiacenzaOrienta, Contractor: rete PiacenzaOrienta

COLLATERAL ACTIVITIES AT MY DEPARTMENT

2019-ongoing

Member of the Data Analytics Unit (DAU) at Politecnico di Milano, Learning analytics project for the analysis of educational data at PoliMi to inform decision making.

2023-ongoing

Member of the gender balance commission at Department of mathematics, PoliMi

2023-ongoing

Member of the social and communication commission at MOX- Modelling and Scientific Computing laboratory, Department of mathematics, PoliMi

Data

09/07/2024

Luogo

Milano