CLADAG2017

11th Scientific Meeting of the CLAssification and Data Analysis Group of the Italian Statistical Society (SIS)

13-15 September 2017, Milan (Italy)
University of Milano-Bicocca

Welcome to CLADAG 2017!

The vibrant **city of Milan** and its Universities celebrate 20 years of CLADAG meetings.

The CLAssification and Data Analysis Group (CLADAG) of the **Italian Statistical Society (SIS)** promotes advanced methodological research in multivariate statistics with a special vocation in Data Analysis and Classification. CLADAG supports the interchange of ideas in these fields of research, including the dissemination of concepts, numerical methods, algorithms, computational and applied results.

CLADAG is a member of the **International Federation of Classification Societies (IFCS)**.

The **11th Scientific Meeting** of the CLAssification and Data Analysis Group of the Italian Statistical Society takes place under the auspices of the International Federation of Classification Societies and of the Italian Statistical Society.

For the Edition 2017 of the Conference, the **Università di Milano-Bicocca** is the host and the organizer, while Università Cattolica del Sacro Cuore, Politecnico di Milano, Università Bocconi, and Università degli Studi di Milano cooperate and support the event.

SCIENTIFIC PROGRAM COMMITTEE

Francesco Mola, Chair, Università di Cagliari
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Pieralda Ferrari, Università degli Studi di Milano
Giuliano Galimberti, Università di Bologna
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Filomena Maggino, Università di Firenze
Mohamed Nadif, University of Paris Descartes, France
Akinori Okada, Tama University, Japan
Raffaella Piccarreta, Università Bocconi, Milano
Antonella Plaia, Università degli Studi di Palermo
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Giovanni Camillo Porzio, Università degli Studi di Cassino
Piercesare Secchi, Politecnico di Milano
Roberta Siciliano, Università degli Studi di Napoli Federico II
José Fernando Vera, Universidad de Granada, Spain
Jeroen Vermunt, Tilburg University, Netherlands
Maurizio Vichi, Università La Sapienza, Roma

LOCAL ORGANISING COMMITTEE

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Federico Andreis, Università degli Studi di Milano
Luca Bagnato, Università Cattolica del Sacro Cuore
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Piergiorgio Lovaglio, Università di Milano Bicocca
Giancarlo Manzi, Università degli Studi di Milano
Silvia Angela Osmetti, Università Cattolica del Sacro Cuore
Anna Maria Paganoni, Politecnico di Milano
Mariangela Zenga, Università di Milano Bicocca

Bicocca CAMPUS MAP

Building U4: rooms 2, 3, 4, 8

Floor -1

room 8

room 2

room 3

Ground floor

room 4

INFORMATION

VENUE
The conference takes place at
University of Milano-Bicocca, Building U4,
Piazza della Scienza 4, Milano

- by Metro M5 (purple line): train stop "Ponale"
- by Metro M1 (red line): train stop "Precotto" + Tram 7 direction "Messina", tram stop "Università Bicocca Scienza"
- by bus 87: stop "Teatro Arcimboldi"
- by bus 51: stop "Ponale-Testi"
- by Tram 7: stop "Università Bicocca Scienza"
- by train: station Greco-Pirelli, lines S8, S9, S11.

REGISTRATION DESK
The Conference registration desk will be located in front of Room 8. It will be open from 8.00 on September 13.

WIFI

EDUROAM Internet connection (https://www.eduroam.org.) is available. To access eduroam you need your institution credentials + the university domain + your password. For example, use john.doe@unimib.it. If you who don't have eduroam access credentials, please let us know and we will get an id for the local unimib wifi network. Please bring a copy of your ID document to facilitate the account registration.

BOOK EXPOSITION
During the conference, you can visit the book exposition of Springer and Pearson.

LUNCH
University bar and dining halls

- Dining hall building U6, floor -1, Opening hours: 11:30 – 15:00
- Bar building U6, floor -1, Opening hours: 8:00 – 16:00
- Bar building U6, ground floor, Opening hours: Mondays to Thursdays, 7:30 – 18:00; Fridays 7:30 – 17:00
- Bar building U7, floor 1, Opening hours: Mondays to Thursdays, 7:30 – 18:00; Fridays 7:30 – 17:00
- Self-service building U7, floor 1, Opening hours: 11:00 – 15:00
- Bar building U3, floor -1, Opening hours: Mondays to Thursdays, 7:30 – 18:00; Fridays 7:30 – 17:00
- Dining hall building U12, floor 1, Opening hours: 11:30 – 15:00

Several restaurants, bars, and cafeterias are close to the Conference venue. Here are some references:

1. Harry's Bar Milano, restaurant and bar - Viale dell'Innovazione 20
2. Je Suis Jambon, piadineria, panineria - Piazza della Trivulziana 4
3. EnIkMa Café, bar, panini - Piazza della Trivulziana 3
4. Il Trancio di Bicocca, focacceria, pizzeria - Piazza della Trivulziana 6
5. SottoSopra, restaurant - Viale Piero e Alberto Pirelli 16
6. Santorini Gyreria, greek restaurant - Viale dell'Innovazione 11

COFFEE BREAK
Coffee breaks will take place in Galleria della Scienza, U4, floor -1.

EVENTS

SOCIAL DINNER

The social dinner will take place on **September 14**, in the **San Nazaro Porch** of the ancient "**Cà Granda**" complex, entrusted to the Tuscan architect Antonio Averlino, known as **Filarete**. Founded on **12 April, 1456** by the Duke of Milan **Francesco Sforza** and his wife Bianca Maria, the gigantic complex was built to provide medical care for the city's poorest people. We thank the University of Milan, that has now its main building there, in *via Festa del Perdono* 7, to host us in such an amazing location.

The four small courtyards "**della spezieria**" ("of the Apothecary's Workshop"), "**dei Bagni delle donne**" ("of the Ladies' Bathroom"), "**della Giazzeria**" ("of the Icehouse") and "**della Legnaia**" ("of the Woodshed") have been returned to their former splendor with the latest series of renovation works.

GUIDED VISIT TOUR

Before the dinner, we will enjoy the typically Renaissance-style round arches of the courtyards, as well as the mullioned windows with ogival arches of the first floor. We will visit some Roman archaeological remains, and enjoy a famous painting by **Guercino** (1689) in the "Cappella dell'Annunciazione".

Young CLAGAD

Two satellites events for young researchers, are proposed, to create a network among PhD students and research fellows coming from different realities. The peer committee proposes a data contest (**September 12**, from **9.00 am to 4.30 pm**) as main activity, and a typical "aperitivo milanese" as well, perfectly fulfilling the networking spirit of Young CLADAG. See the Conference website for details.
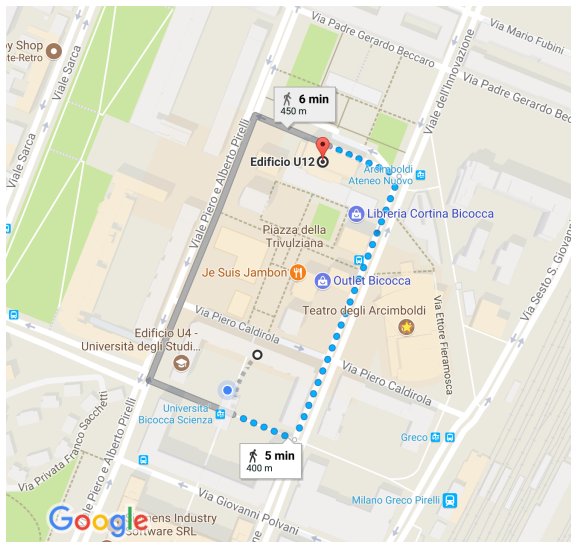
CONCERT

On September 13rd, at 7:20 p.m. we are invited to a Concert in the Auditorium of the University of Milano-Bicocca, Building U12 (5 min walk from the conference venue)
The Milano Chamber Orchestra, with Maestro Alessandro Arnoldo, will play Grieg's Holberg Suite, Saint Paul's suite from Holst and Elgar's Serenade for string.

From the press, three items (in Italian) about the Concert:
ViviMilano, Corriere and Interview to Mo Arnoldo

walking from U4 to U12 Auditorium

WELCOME DINNER

After the concert, on September 13rd, at 8:30 p.m, we just cross Viale dell'Innovazione, to reach Harry's bar for our Welcome Dinner

CONFERENCE SCHEDULE

WEDNESDAY, SEPTEMBER 13

9.00-9.30	OPENING CEREMONY room 8		
room 8	**room 2**	**room 3**	**room 4**
9.35-10.50	INVITED SESSIONS		
Clustering and Dimensionality Reduction Chair: F. Palumbo	**Hidden Markov Models for Longitudinal Data** Chair: R. Piccarreta	**Analysis of partially ordered data in socio-economics** Chair: F. Maggino	
10.50-11.10	Coffee Break		
11.10-12.10	KEYNOTE LECTURE ANTONY DAVISON: Statistical models for complex extremes room 8, Chair: P. Secchi		
12.10-13.10	CONTRIBUTED SESSIONS		
Classification of Multiway and Functional Data Chair: L. Sangalli	**Sampling Designs and Stochastic models** Chair: A. Giovagnoli	**Robust statistical methods** Chair: G. Ritter	**New proposals in Clustering Methods** Chair: A. Punzo
13.10-14.30	Lunch		
14.30-15.30	CONTRIBUTED SESSIONS		
Big data mining and classification Chair: H. Winn	**Advances in model-based clustering** Chair: A. Montanari	**Bayesian methods and networks** Chair: P. Conti	**Categorical data analysis** Chair: A. Wilhelm
15.30-16.50	INVITED SESSIONS		
Classification models in economics and business Chair: J. Pociecha	**Advances in Functional data analysis** Chair: P. Secchi	**New Results in Robust Estimation** Chair: A. Atkinson	
16.50- 17.20	POSTER SESSION Coffee break		
17.20-18.20	CONTRIBUTED SESSIONS		
Data Analysis Chair: J. Antoch	**Mixture and Latent Class Models for Clustering** Chair: M. Ranalli	**Network analysis** Chair: Ernst Wit	**Advances in LMs, GLMs and PCA** Chair: C. Viroli
18.20-19.20	CLADAG ASSEMBLY room 8		
19.20-22.00	CONCERT and WELCOME DINNER		

CONFERENCE SCHEDULE

THURSDAY, SEPTEMBER 14

9.00-10.15	INVITED SESSIONS		
room 8	room 2	room 3	room 4
Innovative applications of multidimensional scaling Chair: A. Okada	**Advances in Robust Methods** Chair: L. A. Garcìa Escudero	**Big Data, Big Knowledge** Chair: P. Mariani	
10.15-10.45	Coffee Break		
10.45-11.45	**KEYNOTE LECTURE** **ROBERTO ROCCI: An URV approach to cluster ordinal data** room 8, Chair: S. Ingrassia		
11.50-13.05	INVITED SESSIONS		
Big data and Design of Experiments Chair: L. Deldossi	**Robust Clustering** Chair: G. Porzio	**Classification and Visualization** Chair: A. D'Ambrosio	
13.05-14.30	Lunch		
14.30-15.45	INVITED SESSIONS		
Designing clinical trials Chair: C. Tommasi	**Advances in Credit Risk Modeling** Chair: C. Liberati	**Heterogeneity and new statistical models** Chair: G. Vittadini	**A world of data** Chair: G. Manzi
15.50-16.20	Young CLADAG DATA CONTEST PRIZE		
16.20-16.50	Coffee Break		
18.30-19.15	Cà Granda Guided visit tour		
19.30	SOCIAL DINNER		

CONFERENCE SCHEDULE

FRIDAY, SEPTEMBER 15

9.00-10.15	INVITED SESSIONS	
room 8	room 2	room 3
Advances in Biostatistics Chair: M. Chiogna	**Advances in Ordinal and Preference Data** Chair: A. Plaia	**Inequality indices and their decomposition** Chair: M. Zenga
10.20-11.20 KEYNOTE LECTURE **J. SUNIL RAO: Classified Mixed Model Prediction** **room 8, Chair: F. Mola** (canceled, due to Hurricane Irma)		
11.20-11.50	**Coffee Break**	
11.50-13.05	**INVITED SESSIONS**	
Advances in Classification and Clustering of Complex Data Chair: C. Conversano	**Preferences in freshly graduates recruiting** Chair: L. Fabbris	**Network Analysis with applications on biological, financial and social networks** Chair: A. Abbruzzo
13.05- 14.20	**Lunch**	
14.20-15.20	**CONTRIBUTED SESSIONS**	
Advances in Classification Chair: A. Solari	**Classification of Textual Data** Chair: G. Bove	**Evaluation in Education** Chair: F. Pennoni
15.25-16.25	**CONTRIBUTED SESSIONS**	
Statistical models for complex data Chair: Ma. Zenga	**Mixture Models** Chair: F. Mola	**Advances in Data Analysis** Chair: F. Bassi
16:30-16.40	**CLOSING CEREMONY** **room 8**	

CONFERENCE PROGRAM

9.35-10.50 ROOM 8

INVITED SESSION *Chair: Francesco Palumbo*
Title: Clustering and Dimensionality Reduction

Mixture models for simultaneous classification and reduction of three-way data

Roberto Rocci, Maurizio Vichi, *Monia Ranalli*

High-dimensional Clustering via Random Projections

Laura Anderlucci, *Francesca Fortunato*, Angela Montanari

Clustering and Structural Equation Modeling

Mario Fordellone, Maurizio Vichi

9.35-10.50 ROOM 2

INVITED SESSION *Chair: Raffaella Piccarreta*
Title: Hidden Markov Models for Longitudinal Data

Package LMest for Latent Markov Analysis of longitudinal categorical data

Francesco Bartolucci, Silvia Pandolfi, Fulvia Pennoni

Dynamic sequential analysis of careers

Fulvia Pennoni, Raffaella Piccarreta

Multivariate hidden Markov regression models with random covariates

Antonio Punzo, Salvatore Ingrassia, *Antonello Maruotti*

9.35-10.50 ROOM 3

INVITED SESSION *Chair: Filomena Maggino*
Title: Analysis of partially ordered data in socio-economics

Comparing three methodological approaches for synthesizing complex phenomena

Katia Iglesias, Christian Suter, Tugce Beycan, B.P. Vani

New posetic tools for the evaluation of financial literacy

Marco Fattore, Mariangela Zenga

Poset theory and policy making: three case studies

Enrico di Bella

11.10-12.10 ROOM 8

KEYNOTE LECTURE *Chair: Piercesare Secchi*

Title: Statistical models for complex extremes

Antony Davison

Institute of Mathematics, Ecole Polytechnique Federale de Lausanne, Switzerland

CONTRIBUTED SESSION *Chair: Laura Sangalli*
Title: Classification of Multiway and Functional Data

A generalized Mahalanobis distance for the classification of functional data

Andrea Ghiglietti, Francesca Ieva, Anna Maria Paganoni

Classification methods for multivariate functional data with applications to biomedical signals

Andrea Martino, Andrea Ghiglietti, Anna M. Paganoni

A new Biclustering method for functional data: theory and applications

Jacopo Di Iorio, Simone Vantini

A leap into functional Hilbert spaces with Harold Hotelling

Alessia Pini, Aymeric Stamm, *Simone Vantini*

CONTRIBUTED SESSION *Chair: Alessandra Giovagnoli*
Title: Sampling Designs and Stochastic models

Statistical matching under informative probability sampling

Daniela Marella, Danny Pfeffermann

Goodness-of-fit test for discrete distributions under complex sampling design

Pier Luigi Conti

Structural learning for complex survey data

Daniela Marella*, Paola Vicard*

The size distribution of Italian firms: an empirical analysis

Anna Maria Fiori, Anna Motta

12.10-13.10 ROOM 3

CONTRIBUTED SESSION *Chair: Gunter Ritter*
Title: Robust statistical methods

New proposals for clustering based on trimming and restrictions
Luis Angel Garcìa Escudero, Francesca Greselin, *Agustin Mayo Iscar*

Wine authenticity assessed via trimming
Andrea Cappozzo, Francesca Greselin

Robust and sparse clustering for high-dimensional data
Sarka Brodinova, Peter Filzmoser, Thomas Ortner, Maia Zaharieva, Christian Breiteneder

M-quantile regression for multivariate longitudinal data
Marco Alfo', *Maria Francesca Marino,* Maria Giovanna Ranalli, Nicola Salvati, Nikos Tzavidis

12.10-13.10 ROOM 4

CONTRIBUTED SESSION *Chair: Antonio Punzo*
Title: New proposals in Clustering methods

Reduced K-means Principal Component Multinomial Regression for studying the relationships between spectrometry and soil texture
Pietro Amenta, *Antonio Lucadamo*, Antonio Pasquale Leone

Comparing clusterings by copula information based distance
Marta Nai Ruscone

Fuzzy methods for the analysis of psychometric data
Isabella Morlini

Inverse clustering: the paradigm, its meaning, and illustrative examples
Jan W. Owsinski, Jaroslaw Stanczak, Karol Opara, Slawomir Zadrozny

CONTRIBUTED SESSION *Chair: Henry Winn*
Title: Big data mining and classification

The importance of the minorities' viewpoints: Rare Event Sampling Technique on Sentiment analysis supervised algorithm
Marika Arena, *Anna Calissano,* Simone Vantini

A generalized K-means algorithm for multivariate big data with correlated components
Giacomo Aletti, *Alessandra Micheletti*

Big data process analysis: from data mining to process analysis: from data mining to process mining
Massimiliano Giacalone, Carlo Cusatelli, Roberto Casadei, Angelo Romano, Vito Santarcangelo

Semiparametric estimation of large conditional variance-covariance and correlation matrices with an application to financial data
Claudio Morana

CONTRIBUTED SESSION *Chair: Angela Montanari*
Title: Advances in model-based clustering

Probabilistic Distance Algorithm generalization to Student's t mixtures
Christopher Rainey, Cristina Tortora, *Francesco Palumbo*

Model-based Clustering of Data with Measurement Errors
Michael Fop, Thomas Brendan Murphy, Lorraine Hanlon

Gaussian Mixture Modeling Under Measurement Uncertainty
Volodymyr Melnykov, Shuchismita Sarkar, Rong Zhengi

A dynamic model-based approach to detect the trend of Statistics from 1970 to 2015
Laura Anderlucci, Angela Montanari, Cinzia Viroli

CONTRIBUTED SESSION *Chair: Pierluigi Conti*
Title: Bayesian methods and networks

Non parametric Bayesian Networks for measurement error detection

Daniela Marella, Paola Vicard, *Vincenzina Vitale*

Sparse Naïve Bayes Classification

Rafael Blanquero, Emilio Carrizosa, Pepa Ramírez-Cobo, *M. Remedios Sillero-Denamiel*

A Constraint-based Algorithm for Nonparanormal Data

Flaminia Musella, *Paola Vicard,* Vincenzina Vitale

Interventional data and Markov equivalence classes of DAGs

Federico Castelletti, Guido Consonni

CONTRIBUTED SESSION *Chair: Adalbert Wilhelm*
Title: Categorical data analysis

Study of context-specific independencies through Chain Stratified Graph Models for categorical variables

Federica Nicolussi, Manuela Cazzaro

Redundancy Analysis Models with Categorical Endogenous Variables: A New Estimation Technique

Gianmarco Vacca

Mixture of copulae based approach for defining the subjects distance in cluster analysis

Andrea Bonanomi, Marta Nai Ruscone, Silvia Angela Osmetti

Dissimilarity profile analysis for assessing the quality of imputation in cardiovascular risk studies

Nadia Solaro

15.35-16.50 ROOM 8

INVITED SESSION *Chair: Jozef Pociecha*
Title: Classification models in Economics and Business

Poland on Global Consumer Markets – Multilevel Segmentation of Market

Adam Sagan, Eugene Kąciak

Hidden variable models for market basket data

Harald Hruschka

Sensitivity Analysis in Corporate Bankruptcy Prediction

Barbara Pawełek, Jozef Pociecha

15.35-16.50 ROOM 2

INVITED SESSION *Chair: Piercesare Secchi*
Title: Advances in Functional data analysis

Growth processes in forensic entomology: a functional data perspective

Davide Pigoli, John Aston, Frédéric Ferraty

Density based classification methods for functional data

Enea Bongiorno, Aldo Goia

Permutation methods for multi-aspect local inference on functional data

Alessia Pini, Lorenzo Spreafico, Simone Vantini, Alessandro Vietti

15.35-16.50 ROOM 3

INVITED SESSION *Chair: Anthony Atkinson*
Title: New results in Robust estimation

A proposal for robust functional clustering based on trimming and constraints

Luis Angel García-Escudero, Diego Rivera-García, Joaquín Ortega and Agustin Mayo-Iscar

Trimming in probabilistic clustering

Gunter Ritter

Covariance matrices of robust estimators in regression

Silvia Salini, Fabrizio Laurini, Marco Riani, Andrea Cerioli

16.50-17:20 Foyer of the conference venue

POSTER SESSION

Accounting for Model Uncertainty in Individualized Designs for Discrete Choice Experiments

Eleonora Saggini, Laura Deldossi, Guido Consonni

Financial-literacy: socio-demographic variables versus environment

Doriana Cuccinelli, Paolo Trivellato, Mariangela Zenga

Joint models for survival and bivariate longitudinal data: a likelihood formulation

Marcella Mazzoleni, Mariangela Zenga

A Spatial and model-based approach to identify the effect of cultural capital on high school dropout. The Italian case.

Stefano Barberis, Enrico Ripamonti

M-quantile Regression in small area estimation: estimation and testing

Annamaria Bianchi, Enrico Fabrizi, Nicola Salvati, Nikos Tzavisis

17.20-18.20 ROOM 8

CONTRIBUTED SESSION *Chair: Jaromir Antoch*
Title: Data Analysis

Measuring vulnerability: a Structural Equation Modelling approach

Ambra Altimari*, Simona Balzano*, Gennaro Zezza

On the turning point detection in financial time series

Riccardo Bramante, *Silvia Facchinetti*

Optimization of the Listwise Deletion Method

Graziano Vernizzi, Miki Nakai

Discretization of measures: an IRT approach

Silvia Golia

17.20-18.20 ROOM 2

CONTRIBUTED SESSION *Chair: Monia Ranalli*
Title: Mixture and Latent Class Models for Clustering

Analysis of university teaching quality merging student ratings with professor characteristics and opinions

Francesca Bassi, Leonardo Grilli, Omar Paccagnella*, Carla Rampichini,* Roberta Varriale

Clustering technique for grouped survival data with a nonparametric frailty term

Francesca Gasperoni, Francesca Ieva, Anna Maria Paganoni, Chris Jackson, Linda Sharples

A latent trajectory model for migrants' remittances: an application to the German socio-economic panel data

Silvia Bacci, Francesco Bartolucci, Giulia Bettin, *Claudia Pigini*

Stepwise latent Markov modelling with covariates in presence of direct effects

Roberto Di Mari, Zsuzsa Bakk

CONTRIBUTED SESSION *Chair: Ernst Wit*
Title: Network analysis

Non-parametric inference for network-valued data
Ilenia Lovato, Alessia Pini, Aymeric Stamm, Simone Vantini

Applying network analysis to online news big data
Giovanni Giuffrida, Simona Gozzo and Francesco Mazzeo Rinaldi, *Venera Tomaselli*

Interval Regression Analysis for the Representation of the Core-Periphery Structure on Large Networks
Carlo Drago

A Latent Space Model for Multidimensional Networks
Silvia D'Angelo, Thomas Brendan Murphy and Marco Alfò

CONTRIBUTED SESSION *Chair: Claudia Viroli*
Title: Advances in LMs, GLMs and PCA

Bootstrap prediction intervals in linear models
Davide Passaretti, Domenico Vistocco

Bayesian Variable Selection in Linear Regression Models with non-normal Errors
Saverio Ranciati, Giuliano Galimberti and Gabriele Soffritti

Principal Component Analysis: the Gini Approach
Stéphane Mussard*, Téa Laurent Jérome Akeywidi Ouraga*

On Proportional Odds Modelling and Marginal Effects of Sardinian Hotels data
Giulia Contu, Claudio Conversano, Thomas W. Yee

THURSDAY, SEPTEMBER 14

9.00-10.15 ROOM 8

INVITED SESSION *Chair: Akinori Okada*
Title: Innovative applications of multidimensional scaling

Preference judgments of curvature and angularity in architectural façades

Giuseppe Bove, Nicole Ruta, Stefano Mastandrea

Changes in couples' breadwinning patterns and wife's economic role in Japan

Miki Nakai

Individual differences in brand switching

Akinori Okada, Hiroyuki Tsurumi

9.00-10.15 ROOM 2

INVITED SESSION *Chair: Luis Angel García-Escudero*
Title: Advances in Robust methods

Weighted likelihood estimation of multivariate location and scatter

Luca Greco, Claudio Agostinelli

Efficient robust methods for multivariate data via monitoring

Antony C. Atkinson

A new robust estimator of multilevel models based on the forward search approach

Aldo Corbellini, *Luigi Grossi,* Fabrizio Laurini

9.00-10.15 ROOM 3

INVITED SESSION *Chair: Paolo Mariani*
Title: Big Data - Big Knowledge

Flexible Inference for FMRI Data
Aldo Solari

Opinion Mining and City Branding
Federico Neri, Roberto Grandi - Integris

From predictive to reactive approach: how not to be biased from the past in volatile contexts
Federico Stefanato, Marco Cagna - Waterdata

10.45-11.45 ROOM 8

KEYNOTE LECTURE *Chair: Salvatore Ingrassia*

Title: An URV approach to cluster ordinal data

Roberto Rocci, *Dipartimento di Economia e Finanza, Università degli studi di Tor Vergata, Rome, Italy*

INVITED SESSION *Chair: Laura Deldossi*
Title: Big data and Design of experiments

Passive and active observation: experimental design issues in big data
Henry Wynn

Optimal design of experiments in the presence of covariate information
Peter Goos

Is it possible a design of experiment with puzzling dynamic data?
Giacomo Aletti

INVITED SESSION *Chair: Giovanni Porzio*
Title: Robust Clustering

Robust clustering tools based on optimal transportation
Eustasio del Barrio

Advances in robust clustering for regression structures
Domenico Perrotta, Francesca Torti, Andrea Cerioli, Marco Riani

Robustness aspects of DD-classifiers for directional data
Giuseppe Pandolfo

INVITED SESSION *Chair: Antonio D'Ambrosio*
Title: Classification and Visualization

Explorative visualization techniques for imbalanced classification tasks

Adalbert Wilhelm

Calibrated cluster validity for comparing the quality of clusterings

Christian Hennig

Visual Tools for Interactive Clustering of UE State Members via Metabolic Patterns

Massimo Aria, Carmela Iorio, Roberta Siciliano, *Michele Staiano*

INVITED SESSION *Chair: Chiara Tommasi*
Title: Designing clinical trials

The rise of early phase clinical trials

Nancy Flournoy

Adaptive dose-finding designs to identify multiple doses that achieve multiple response targets

Adrian Mander

A new design strategy for hypothesis testing under response adaptive randomization

Maroussa Zagoraiou, Alessandro Baldi Antognini, Alessandro Vagheggin

14.30-15.45 ROOM 2

INVITED SESSION *Chair: Caterina Liberati*
Title: Advances in Credit Risk modelling

Incorporating heterogeneity and macroeconomic variables into multi-state delinquency models for credit cards
Viani Djeundje, *Jonathan Crook*

Scoring models for P2P lending platforms: an evaluation of predictive performance
Paolo Giudici, *Branka Hadij-Misheva*

Advances in risk measurement in a distressed banks scenario
Mauro Bernardi, Roy Cerqueti, Arsen Palestini

14.30-15.45 ROOM 3

INVITED SESSION *Chair: Giorgio Vittadini*
Title: Heterogeneity and new statistical models

Fitting Cluster-Weighted Models in R
Angelo Mazza, *Antonio Punzo,* Salvatore Ingrassia

Outcome evaluation in healthcare: The Multilevel Logistic Cluster Weighted Model
Paolo Berta, Fulvia Pennoni, Veronica Vinciotti

Mixture model under overlapping clusters: an application to network data
Saverio Ranciati, *Veronica Vinciotti,* Ernst Wit

14.30-15.45 ROOM 4

INVITED SESSION *Chair: Giancarlo Manzi*
Title: A world of data

Active and passive measurement: a paradigm change
Giorgio Licastro - GFK Eurisko

Data Science approach and challenges in private sectors
Rocco Michele Lancellotti - Data Reply

Analytics Data LAB: The power of Big Data Investigation and Advanced Analytics to maximize the Data Capital
Roberto Falcinelli - Oracle

15.50-16.20 ROOM 8

Young CLADAG DATA CONTEST PRIZE

FRIDAY SEPTEMBER, 15

9.00-10.15 ROOM 8

INVITED SESSION *Chair: Monica Chiogna*
Title: Advances in Biostatistics

Regression models for the restricted residual mean time for right-censored and left-truncated data
Giuliana Cortese, Thomas Scheike

Estimating mediation effects in epigenomic studies
Vera Djordjilovic

A graphical model approach for driver genes detection in perturbed biological pathways
Elisa Salviato

9.00-10.15 ROOM 2

INVITED SESSION *Chair: Antonella Plaia*
Title: Advances in Ordinal and Preference data

Zero inflated CUB models for the evaluation of leisure time activities
Maria Iannario, Rosaria Simone

Constrained consensus bucket order
Antonio D'Ambrosio, Carmela Iorio, Roberta Siciliano

Ensemble methods for Ranking data
Antonella Plaia*, Mariangela Sciandra,* Roberta Murò

INVITED SESSION *Chair: Michele Zenga*
Title: Inequality indices and their decomposition

Contributions from macro-regions and from income components to the Zenga Index I(Y): an application to data from Poland and Italy
Michele Zenga, *Alina Jedrzejczak,* Igor Valli

Joint decomposition by subpopulations and sources of the point and synthetic Bonferroni inequality measures
Michele Zenga, *Igor Valli*

Transfers between sources and units in Zenga's inequality index decomposition
Alberto Arcagni

KEYNOTE LECTURE *Chair: Francesco Mola*

Title: Classified Mixed Model Prediction
(canceled, due to Hurricane IRMA)

J. Sunil Rao,
Division of Biostatistics, Department of Public Health Sciences, University of Miami, Florida

INVITED SESSION *Chair: Marcello Chiodi*
Title: Advances in Classification and Clustering of complex Data

Combined methods in multi-label classification algorithms
Luca Frigau, Claudio Conversano, Francesco Mola

Validation of Experiments Involving Image Segmentation of Botanic Seeds
Jaromir Antoch, Claudio Conversano, Luca Frigau, Francesco Mola

Time Series Clustering for Portfolio Selection
Carmela Iorio, Antonio D'Ambrosio

INVITED SESSION *Chair: Luigi Fabbris*
Title: Preferences in freshly graduates recruiting

Academic disciplines as perceived by entrepreneurs
Luigi Fabbris, *Manuela Scioni*

University and tourism. Graduates' profiles for the tourism sector
Antonio Giusti, Laura Grassini, Manuela Scioni

The effect of the firm size in the selection of recruitment for new graduate
Franca Crippa, Paolo Mariani, Andrea Marletta, *Mariangela Zenga*

11.50-13.05 ROOM 3

INVITED SESSION *Chair: Antonino Abbruzzo*
Title: Network Analysis with applications on biological, financial and social networks

Co-authorship Network in Statistics: methodological issues and empirical results
Susanna Zaccarin, Maria Prosperina Vitale, Domenico De Stefano

Network inference in genomics
Ernst Wit

Spatial modeling of brain connectivity data
Daniele Durante, Emanuele Aliverti

14.20-15.20 ROOM 8

CONTRIBUTED SESSION *Chair: Aldo Solari*
Title: Advances in Classification

Using PAM and DTW for time series classification
Ilaria Lucrezia Amerise

On Support Vector Machines under multiple-cost scenario
Sandra Benítez-Peña, Rafael Blanquero, Emilio Carrizosa, Pepa Ramírez-Cobo

Macroeconomic forecasting: a non-standard optimisation approach to the calibration of dynamic factor models
Fabio Della Marra

14.20-15.20 ROOM 2

CONTRIBUTED SESSION *Chair: Giuseppe Bove*
Title: Classification of Textual Data

Measuring popularity from Twitter
Farideh Tavazoee, Claudio Conversano, Francesco Mola

A Gamification Approach to Text Classification in R
Giorgio Maria Di Nunzio

From unstructured data and word vectorization to meaning: Text mining in Insurance
Mattia Borrelli, Diego Zappa

Gamlss for Big Data: ROC curve prediction using Twitter data
Paolo Mariani*, Andrea Marletta,* Mariangela Sciandra

14.20-15.20 ROOM 3

CONTRIBUTED SESSION *Chair: Fulvia Pennoni*
Title: Evaluation in Education

Nonparametric mixed-effects model for unsupervised classification in the Italian education system
Chiara Masci, Francesca Ieva, Anna Maria Paganoni, Tommaso Agasisti

Multivariate mixed models for assessing equity and efficacy in education. An analysis over time using EU15 PISA data
Isabella Sulis, Francesca Giambona, Mariano Porcu

A zero-inflated beta regression model for predicting first-year performance in university career
Matilde Bini, Lucio Masserini

Students' satisfaction in higher education: how to identify courses with low-quality teaching
Marco Guerra, *Francesca Bassi,* José G. Dias

15.25-16.25 ROOM 8

CONTRIBUTED SESSION *Chair: Mariangela Zenga*
Title: Statistical models for complex data

Spatial Survival Models for Analysis of Exocytotic Events on Human beta-cells Recorded by TIRF Imaging
Thi Huong Phan, Giuliana Cortese

Testing different structures of spatial dynamic panel data models
Francesco Giordano, Massimo Pacella, *Maria Lucia Parrella*

Identification of earthquake clusters through a new space-time-magnitude metric
Renata Rotondi, Antonella Peresan, Stefania Gentili, Elisa Varin

A circular density strip plot
Davide Buttarazzi, Giovanni Camillo Porzio

15.25-16.25 ROOM 2

CONTRIBUTED SESSION *Chair: Francesco Mola*
Title: Mixture Models

A special Dirichlet mixture model for multivariate bounded responses
Agnese Maria Di Brisco, Sonia Migliorati

Cluster-Weighted Beta Regression
Marco Alfò, *Luciano Nieddu,* Cecilia Vitiello

A Special Dirichlet Mixture Model in a Bayesian Perspective
Roberto Ascari, Sonia Migliorati, Andrea Ongaro

CONTRIBUTED SESSION *Chair: Francesca Bassi*
Title: Advances in data Analysis

Assessing Heterogeneity in a Matching Estimation of Endogenous Treatment Effect
Maria Gabriella Campolo, *Antonino Di Pino,* Edoardo Otranto

Template matching for hospital comparison: an application to birth event data in Italy
Massimo Cannas, Paolo Berta, Francesco Mola

On variability analysis of evolutionary algorithm-based estimation
Manuel Rizzo

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