



# PROGRAM SCHEDULE

## 31 August 2022

16.00-17.00 Registration

17.00-17.15 **Opening**

17.15-18.40 Talk Session 1

### **Benford's Law for Anomaly and Fraud Detection**

Chair: *Domenico Perrotta* (Joint Research Centre (JRC), Ispra, Italy)

- [Lucio Barabesi](#), [Andrea Cerioli](#), [Marco Di Marzio](#) (University of Chieti-Pescara, Italy)  
*Statistical models and the Benford hypothesis: A unifying framework*
- [Peter Filzmoser](#) (TU Wien, Austria), [Nermina Mumic](#)  
*Benford goes multivariate: A new fraud detection method, with application to music streaming data*
- [Andrea Cerioli](#) (Italy), [Lucio Barabesi](#), [Andrea Cerasa](#), [Domenico Perrotta](#)  
*Who is afraid of the probability-savvy fraudster?*

18.40-19.35 Keynote Lecture 1

### **Robustness issues in subspace clustering**

[Luis-Angel Garcia Escudero](#) (Universidad de Valladolid, Spain)

Chair: *Peter Filzmoser* (TU Wien, Austria)

19.40-21.15 **Welcome Cocktail**



## 1 September 2022

08.30-09.55 Talk Session 2

### **Robust Model-based Clustering and Outlier Detection**

Chair: *Pietro Coretto* (University of Salerno, Italy)

- [Andrea Cappozzo](#), [Luis Angel Garcia-Escudero](#), [Francesca Greselin](#) (University of Milano Bicocca, Italy), [Agustín Mayo-Iscar](#)  
*Monitoring the robust Cluster-Weighted model*
- [Matteo Farnè](#) (University of Bologna, Italy), [Angelos Vouldis](#)  
*Banks' business models in the euro area: a cluster analysis in high dimensions*
- [Hung Tong](#) (The University of Alabama, USA), [Cristina Tortora](#)  
*Directional Outlier Detection and Robust Model-Based Clustering with Missing Data*

09.55-10.50 Keynote Lecture 2

### **Perturb and conquer: how classification can benefit from data perturbation**

[Angela Montanari](#) (University of Bologna, Italy)

Chair: *Maurizio Vichi* (Sapienza University of Rome, Italy)

10.50-11.20 **Coffee Break**

11.20-12.45 Talk Session 3

### **Elliptical Mixture Models**

Chair: *Gertraud Malsiner-Walli* (Vienna University of Economics and Business, Austria)

- [Carlo Cavicchia](#), [Maurizio Vichi](#) (Sapienza University of Rome, Italy), [Giorgia Zaccaria](#)  
*A class of parsimonious Gaussian mixture models with an extended ultrametric covariance structure*
- [Pietro Coretto](#) (University of Salerno, Italy), [Christian Hennig](#)  
*Nonparametric consistency for ML estimation and clustering with finite mixtures of elliptically symmetric distributions*
- [Luca Scrucca](#) (University of Perugia, Italy),  
*Gaussian Mixtures Using Range-Logit Transformation with an Application to Image Segmentation*

12.45-14.00 **Lunch**



## 1 September 2022

14.00-15.25 Talk Session 4

### Latent Class Models

Chair: *Cinzia Viroli* (University of Bologna, Italy)

- [Silvia Columbu](#) (University of Cagliari, Italy), Jeroen K. Vermunt  
*Multilevel Latent Class Models for cross-classified data*
- Sylvia Frühwirth-Schnatter, Bettina Grün, [Gertraud Malsiner-Walli](#) (Vienna University of Economics and Business, Austria)  
*Capturing Correlated Clusters Using Mixtures of Latent Class Models*
- [Rosa Fabbriatore](#) (University of Naples Federico II, Italy), Roberto Di Mari, Zsuzsa Bakk, Mark de Rooij, Francesco Palumbo  
*A three-step rectangular Latent Markov modelling for a recommender system in self-learning platforms*

15.25-16.20 Keynote Lecture 3

### Robust selection of the number of clusters and of the clustering structure using Bayesian methods

[Judith Rousseau](#) (University of Oxford, UK)

Chair: *Agustín Mayo Iscar* (Universidad de Valladolid, Spain)

16.20-16.50 **Coffee Break**



## 1 September 2022

### 16.50-17.20 **Lightning Talk Session 1**

Chair: *Michael Fop* (University College Dublin, Ireland)

- [Marco Berrettini](#) (University of Bologna, Italy), Giuliano Galimberti, Saverio Ranciati  
*Bayesian semiparametric finite mixture of regression models*
- [Luca Brusa](#) (University of Milano Bicocca, Italy), Catherine Matias  
*A stochastic blockmodel for hypergraphs*
- [Yana Melnykov](#) (The University of Alabama, USA), Xuwen Zhu  
*On finite mixture modeling of change-point processes*
- [Iuliia Promskaia](#) (University College Dublin, Ireland), Adrian O'Hagan, Michael Fop  
*Model-based clustering for network-linked data*
- [Galina Andreeva](#) (University of Edinburgh Business School, UK)  
*Open Banking challenges for clustering and classification*
- Francesca Torti, Gabrielle Voiseaux, [Domenico Perrotta](#) (European Commission, Joint Research Centre (JRC), Ispra, Italy)  
*Robustness issues for semi-supervised learning of financial frauds*
- [Iliia Sucholutsky](#) (Princeton University, USA), Thomas L. Griffiths  
*Learning to Classify From Almost No Data*

### 17.20-18.45 **Talk Session 5**

#### **Supervised and Unsupervised Learning for Anomaly and Fraud Detection**

Chair: *Galina Andreeva* (University of Edinburgh Business School, UK)

- [Clarisse Boinay](#) (INRIA and Seckiot, France), Christophe Biernacki, Cristian Preda, Thomas Anglade  
*Variational inference of a stochastic block Model for a sequence of graphs for testing abnormality: application to cybersecurity*
- [Edoardo Fibbi](#) (KU Leuven, Belgium and Joint Research Centre - JRC, Ispra, Italy), Tim Verdonck, Stefan Van Aelst, Francesca Torti, Domenico Perrotta  
*A robust co-clustering approach to short texts*
- [Félix Vandervorst](#) (Katholieke Universiteit Leuven, University of Antwerp, Belgium), Wouter Verbeke, Tim Verdonck  
*Supervised Learning with Uncertain Labels for Claims Fraud Detection*

20.45 **Workshop Dinner** (meeting at 20.00)



## 2 September 2022

08.45-10.10 Talk Session 6

### **Non-Gaussian Mixture Models 1**

Chair: *Cristina Tortora* (San José State University, USA)

- [Michael Fop](#) (University College Dublin, Ireland), Federica Benassi, Giuliano Galimberti  
*Model-based clustering of mixed-type data via mixtures of mixed graphical models*
- [Tin Lok James Ng](#) (University College Dublin, Ireland), Andrew Zammit-Mangion  
*Mixture of Normalizing Flows for spherical density estimation*
- [Garritt L. Page](#) (Brigham Young University, USA), Maria Franco-Villoria, Massimo Ventrucci  
*Informed Finite Mixture Models*

10.10-10.35 **Lightning Talk Session 2**

Chair: *Shuchismita Sarkar* (Bowling Green State University, USA)

- [Alessandro Bitetto](#) (University of Pavia, Italy), Paola Cerchiello  
*Oracle-LSTM: a neural network approach to mixed frequency time series prediction*
- [Ilaria Bombelli](#) (Sapienza University of Rome), Maurizio Vichi  
*Fuzzy clustering of a set of dissimilarity matrices by consensus parsimonious dendrograms*
- [Martina Boschi](#) (University of Bologna, Italy), Ernst-Jan Camiel Wit  
*Relational Event models with time varying and random effects: an application to the alien species invasions*
- [Cinzia Di Nuzzo](#) (Sapienza University of Rome), Donatella Vicari  
*A clustering model for skew-symmetric data*
- [Nicola Piras](#) (University of Cagliari, Italy), Silvia Columbu  
*SEM-Gibbs algorithm for Multilevel Cross-Classified Latent Class analysis of Binary Data*
- [Andrej Svetlošák](#) (University of Edinburgh, UK), Miguel de Carvalho, Gabriel Martos Venturini, Raffaella Calabrese  
*Divide and Conquer: Cluster Analysis with a Different Number of Clusters per Margin*

10.35-11.05 **Coffee Break**

11.05-12.00 **Keynote Lecture 4**

### **Finite mixture modeling in stylometry with applications**

***Volodymyr Melnykov*** (University of Alabama, USA)

Chair: *Christophe Biernacki* (INRIA, Lille, France)



## 2 September 2022

12.00-13.25 Talk Session 7

### Non-Gaussian Mixture Models 2

Chair: *Garitt Page* (Brigham Young University, USA)

- [Andriette Bekker](#) (University of Pretoria, South Africa), [Johan Ferreira](#), [Salvatore Tomarchio](#), [Antonio Punzo](#)  
*Innovative reparametrized beta- and gamma mixture models in a contamination setting*
- [Nam-Hwui Kim](#) (University of Waterloo, Canada), [Ryan Browne](#)  
*Mode Merging for Non-Gaussian Finite Mixtures*
- [Emiliano Seri](#) (Sapienza University of Rome), [Thomas Brendan Murphy](#), [Roberto Rocci](#)  
*Partial membership models for soft clustering of multivariate count data*

13.25-14.30 Lunch

### 14.30-14.55 Lightning Talk Session 3

Chair: *Nam-Hwui Kim* (University of Waterloo, Canada)

- [Salvatore D. Tomarchio](#) (University of Catania, Italy), [Antonio Punzo](#), [Luca Bagnato](#)  
*The multivariate skew shifted exponential normal distribution and its use in finite mixture modeling*
- [Anna Gottard](#), [Giulia Vannucci](#), [Leonardo Grilli](#) (Università di Firenze), [Carla Rampichini](#)  
*Mixed-effect model with trees*
- [Thais Pacheco Menezes](#) (University College Dublin, Ireland), [Michael Fop](#), [Thomas Brendan Murphy](#)  
*Hausdorff Distance: A powerful tool for matching households and individuals in historical censuses*
- [Fabiola Del Greco-M.](#) (Institute for Biomedicine, Eurac Research, Bolzano, Italy), [Chiara Volani](#), [Johannes Rainer](#), [Giuseppe Paglia](#), [Peter P. Pramstaller](#)  
*Machine learning algorithm to identify a metabolic profile able to predict biomarkers levels*
- [Andrea Maugeri](#) (University of Catania, Italy), [Martina Barchitta](#), [Giuliana Favara](#), [Claudia La Mastra](#), [Maria Clara La Rosa](#), [Roberta Magnano San Lio](#), [Antonella Agodi](#)  
*Clustering on Principal Components to Derive Dietary Patterns in Nutritional Epidemiology*
- [Lutecia Servius](#) (King's College London, England), [Davide Pigoli](#), [Franca Fraternali](#), [Joseph Chi-Fung Ng](#)  
*A Comparison of Classification Methods for Sequencing Data in Immunology*



## 2 September 2022

14.55-15.50 Keynote Lecture 5

**A Bayesian two-way latent structure clustering model for genomic data integration with an application to subtyping breast cancer**

***Arnoldo Frigessi*** (Oslo Centre for Biostatistics & Epidemiology, Norway)

Chair: *Angela Montanari* (University of Bologna, Italy)

15.50-16.35 **Coffee Break**

16.35-18.15 Talk Session 8

**Models and Applications in Medicine**

Chair: *Arnoldo Frigessi* (Oslo Centre for Biostatistics & Epitemiology, Norway)

- [Silvia D'Angelo](#) (University College Dublin, Ireland), Lorraine Brennan and Isobel Claire Gormley  
*A Latent Variable Approach to Infer Intake from Multiple Biomarker Measurements*
- [Elisabeth Griesbauer](#) (Technische Universität München, Germany), Claudia Czado, Arnoldo Frigessi, Ingrid Hobæk Haff  
*Vine-Copula Synthetic Data Generation For Classification*
- [Luca Martino](#) (Universidad Rey Juan Carlos, Spain), Roberto San Millan-Castillo, Eduardo Morgado  
*Spectral information criterion: reducing drastically the number of possible models*
- [Shuchismita Sarkar](#) (Bowling Green State University, USA), Xuwen Zhu  
*Multiple change point clustering of count processes*

18.15-18.20 **Closing**



18.20-19.45 Wine Session

**A wine tour in Sicily**

Chair: *Mariella Ferrara* (L'Archestrato, Catania, Italy)

Wineries, wines and vine varieties:

**Assuli**

- *Arcodace* (Perricone, 2021)
- *Fordispina* (Perricone Rosè, 2021)
- *Fiordiligi* (Grillo, 2021)

**Casa Grazia**

- *Laetitya* (Frappato, 2021)
- *Euphorya* (Frappato Spumante Brut)
- *Adorè* (Moscato Bianco, 2021)

**Fina**

- *Kikè* (Traminer Aromatico & Sauvignon Blanc, 2021)
- *Taif* (Zibibbo Secco, 2021)

**Gulino**

- *Fanus* (Nero d'Avola & Syrah, 2019)
- *Don Nuzzo* (Moscato di Siracusa, 2020)

**Masseria Setteporte**

- *Nerello in Rosa* (Nerello Mascalese & Nerello Cappuccio, 2016 & 2021)
- *Nerello Mascalese* (Nerello Mascalese, 2020)