Programme

Wednesday, October 17th

15:00-18:30 Tutorial
15:00-16:30 Introduction to Symbolic Data Analysis
Paula Brito
16:30-17:00 Coffee-break
17:00-18:30 Presentation of the RSDA Package with Case Studies
Oldemar Rodriguez

Thursday, October 18th

9:00-9:30 Opening Session

9:30-10:05 New Perspectives on SDA
Chair: Paula Brito
New Advances on the Symbolic Data Analysis Framework:
Basic Theory, Explanatory Criteria, Improving Machine Learning,
New Directions of Research
Edwin Diday

10:05-11:20 Session I - Foundations of SDA
Chair: Monique Noirhomme-Fraiture
10:05-10:30 Complex Aggregation of Large Data Sets
Vladimir Batagelj
10:30-10:55 Measuring Statistical Relation Between Non-Ordinal Bar Chart Symbolic Variables
Edwin Diday, Simona Korenjak-Černe
10:55-11:20 Symbolic Polygonal Data Analysis
Wagner J.F. da Silva, Renata M.C.R. de Souza, Francisco J.A. Cysneiros

11:20-11:45 Coffee-break
**11:45-13:00 Session II - Clustering I**
Chair: Francisco de Carvalho

11:45-12:10 Multiple-Valued Symbolic Data Clustering: A Model-Based Approach
*José G. Dias*

12:10-12:35 Symbolic Data Clustering Using Quasi-Arithmetic Means
*Etienne Cuvelier, Marie-Aude Auffaure*

12:35-13:00 Dissimilarity Between Aggregated Symbolic Data Using Chi-Squared Statistics
*Nobuo Shimizu, Junji Nakano, Yoshikazu Yamamoto*

**13:00-14:30 Lunch**

**14:30-16:10 Session III - Factorial Methods**
Chair: Rosanna Verde

14:30-14:55 Maximizing Symbolic Variance to Derive Interval-Valued Principal Components
*M. Rosário Oliveira, Margarida Azeitona*

14:55-15:20 Multiple Correspondence Analysis for Symbolic Multi-Valued Variables
*Jorge Arce, Oldemar Rodríguez*

15:20-15:45 Analysis of Drinking Water Consumption Using Interval-Valued Principal Component Analysis
*Margarida Azeitona, M. Rosário Oliveira, Sérgio Teixeira Coelho, Diogo Vitorino*

15:45-16:10 Analysis of University Students’ Online Behavior Based on Symbolic Data
*Qing Zhao, Huiwen Wang*

**16:10-16:35 Coffee-break**

**16:35-17:50 Session IV - Applications of SDA I**
Chair: José G. Dias

16:35-17:00 Symbolic Data in Botany (and Zoology)
*Matthias H. Hoffmann*

17:00-17:25 Exploratory Meta-Analysis with SDA
*Masahiro Mizuta*

17:25-17:50 Reducibility of Multilayer Networks: Symbolic Data Analysis with Applications to Business Economics
*Pedro Campos*
Friday, October 19th

9:00-10:40 Session V - Statistical Modelling
Chair: Pedro Duarte Silva

9:00-9:25 Dirichlet Process Mixture Models for Distributional Data
Richard Emilion

9:25-9:50 Spatial Autocorrelation Measure for Symbolic Data
Justyna Wilk, Tomasz M. Kossowski

9:50-10:15 Hypothesis Testing of Equality of Two Mean Intervals
Anuradha Roy, Daniel Klein

Andrej Srakar

10:40-11:05 Coffee-break

11:05-12:45 Session VI - Clustering II
Chair: Edwin Diday

11:05-11:30 Co-Clustering Algorithms on Distributional Data
Rosanna Verde, Francisco de A.T. de Carvalho, Antonio Balzanella

11:30-11:55 Clustering Aggregated Ordinal Data
Margarida G. M. S. Cardoso

11:55-12:20 Self-Organizing Maps with Adaptive Distances for Distributional Data
Antonio Irpino, Francisco de A.T. de Carvalho, Rosanna Verde

12:20-12:45 Identification and Interval Based Clustering of Meaning Density-Based Spatial Areas
Carlo Drago, Alessandra Reale

12:45-14:15 Lunch

14:15-15:55 Session VII - Applications of SDA II
Chair: Masahiro Mizuta

14:15-14:40 Processing Symbolic Modal Valued Textual Data Through Compositional Approaches
Mireille Gettler Summa, Paula Brito

14:40-15:05 Analysis of the Distribution of Participation in Wikis Using the Gini Coefficient, the Frequency Distribution and the Lorenz Curve
Javier Arroyo, Antonio Irpino, Samer Hassan

15:05-15:30 Analysis of Gender-Age-Cause-Specific Mortality in European Countries with SYR Software
Filipe Afonso, Aleša Lotrič Dolinar, Simona Korenjak-Černe, Edwin Diday

15:30-15:55 Symbolic Data Analysis in Health Program Evaluations: Methods and Applications
Carlo Drago, Matteo Ruggeri

15:55-16:20 Coffee-break
16:20-17:35  **Session VIII - Regression**  
Chair: Sónia Dias

16:20-16:45  Exponential-Type Kernel Based Robust Regression for Interval-Valued Data  
*Francisco de A.T. de Carvalho, Eufrasio de A. Lima Neto*

16:45-17:10  Estimating Risk in Capital Asset Pricing for Interval-Valued Data  
*Dailys M.A. Reye, Renata M.C.R. de Souza, Francisco J.A. Cysneiros, Audrey H.M.A. Cysneiros*

17:10-17:35  Where Symbolic and Functional Data Analysis Meet: Regressions for Nonparametric Symbolic Data  
*Andrej Srakar*

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**Saturday, October 20th**

**9:00-10:40**  **Session IX - Time Series**  
Chair: Javier Arroyo

9:00-9:25  Time-Varying Coefficient Models for Interval-Valued Time Series  
*Yuying Sun, Ai Han, Yongmiao Hong, Shouyang Wang*

9:25-9:50  Nonparametric Estimation and Identification of Models with Interval-Valued Time Series  
*Yuying Sun, Aman Ullah, Shouyang Wang*

9:50-10:15  Prediction Regions for Interval-Valued Time Series  
*Gloria González-Rivera, Yun Luo, Esther Ruiz*

10:15-10:40  Robust Reconciliation for Hierarchical Interval Time Series Forecasting  
*Zhi-Chao Wang, Hui-Wen Wang*

**10:40-11:05**  **Coffee-break**

**11:05-12:20**  **Session X - Visualization and Modelling of Interval Data**  
Chair: Vladimir Batagelj

11:05-11:30  MAINT.Data 2.0: A Mature Framework for Modelling and Analysing Interval Data  
*A. Pedro Duarte Silva, Paula Brito*

11:30-11:55  Symbolic Clustering and Anomaly Detection for Business Analytics  
*Ana Teresa Fernandes, M. Rosário Oliveira, Conceição Amado, Sérgio Pinheiro, Nuno Dias*

11:55-12:20  Matrix Visualization and Exploratory Data Analysis for Big Data  
*Chun-houh Chen, Chiu-n How Kao, Chun-houh Chen*

**12:20-13:20**  **Discussion**

**13:20-13:30**  **Closing Session**

**13:30-15:00**  **Lunch**