



Statistics and Data Science

New Developments for Business and Industrial Applications

24-25 MAY 2018

Joint Meeting SIS-SDS Group and *it*ENBIS

Collegio Carlo Alberto
Piazza Arbarello, 8 - Torino

<http://www.sds2018.polito.it/>



Fondazione
de Castro



POLITECNICO
MILANO 1863
DIPARTIMENTO DI MATEMATICA



DIPARTIMENTO DI
INGEGNERIA
INDUSTRIALE



Scientific Committee

Luca Bortolussi (Università di Trieste)
Antonio Canale (Università di Padova)
Paola Cerchiello (Università di Pavia)
Roberto Fontana (Politecnico di Torino)
Paolo Ghirardato (Università di Torino)
Biagio Palumbo (Università di Napoli Federico II)
Antonio Pievatolo (IMATI - CNR)
Fabrizio Ruggeri (IMATI - CNR)
Matteo Ruggiero (Università di Torino e Collegio Carlo Alberto)
Pietro Terna (Collegio Carlo Alberto, Torino)
Nicola Torelli, Co-chair (Università di Trieste)
Francesco Vaccarino (Politecnico di Torino)
Simone Vantini (Politecnico di Milano)
Rosanna Verde (Università della Campania Luigi Vanvitelli)
Grazia Vicario, Co-chair (Politecnico di Torino)

Local Organizing Committee

Enrico Bibbona
Roberto Fontana (Chair)
Gianluca Mastrantonio
Grazia Vicario

PROGRAMME

Thursday 24 May 2018

08:00-09:00	Registration
09:00-09:30	<p>Welcome</p> <p>Room: Auditorium</p> <p>Pietro Terna, Monica Pratesi, Nicola Torelli and Grazia Vicario</p>
09:30-10:20	<p>Keynote Lecture 1</p> <p>Room: Auditorium</p> <p>Session Chair: Simone Vantini</p> <p>Alberto Arrigoni (Senior Data Scientist, Pirelli), Getting ready for AI and machine learning: creating a data-driven culture</p>
10:20-11:20	<p>C1 – Contributed Session Functional Data Analysis</p> <p>Session Chair: Antonio Canale</p> <p>Room: Auditorium</p> <p>10:20-10:40 Functional-on-Functional Linear Models for the Prediction of Mobility Flows, Alessia Pini (Dept. Statistical Sciences, Catholic University of Sacred Heart, Milan)</p> <p>10:40-11:00 Functional Linear Models For Energy Modelling and Disaggregation, Matteo Fontana (Politecnico di Milano)</p> <p>11:00-11:20 Functional forecasting in virtual gas markets with locally-autoregressive interacting particle systems, Kon Kam King Guillaume (Collegio Carlo Alberto, University of Torino)</p> <p>C2 – Contributed session Applications in Economics and Business</p> <p>Session Chair: Paola Cerchiello</p> <p>Room: Class room 2</p> <p>10:20-10:40 A longitudinal analysis of the Italian manufacturing companies' productivity in the period 2004-2013, Matilde Bini (European University of Rome)</p> <p>10:40-11:00 Testing the Hypotheses on the Fast Fashion Industry Using Internet as a Source of Data, Marzia Freo (Department of Statistics, University of Bologna)</p> <p>11:00-11:20 Data-driven estimation of trade promotion effect from transactional data: analysis of the Mexican beverage market, Matteo Landrò</p>

	(Politecnico di Milano)
11:20-11:50	<i>Coffee break</i> Room: Common Room
11:50-13:20	Plenary session Data Visualization Organizers: Antonio Pievatolo, Fabrizio Ruggeri, Simone Vantini and Grazia Vicario Session Chair: Rosanna Verde Room: Auditorium 11:50-12:20 Visual Metaphors for Sense Making in (Big) Data Analysis , Paolo Ciuccarelli (DensityDesign Research Lab - Politecnico di Milano) 12:20-12:50 Paving the Way into Predictive Modelling for Text and Functional Data , Volker Kraft (SAS Institute/JMP Division) 12:50-13:20 Interfaces for the Data City. Visual interfaces for urban data exploration , Marco Quaggiotto (ISI Foundation, Politecnico di Milano)
13:20-14:30	<i>Lunch break</i>
14:30-15:30	S1 - Specialized session New techniques for large scale official statistics analysis and visualization Organizer: Rosanna Verde Session Chair: Nicola Torelli Room: Auditorium 14:30-14:50 The path towards Trusted Smart Statistics , Fabio Ricciato (Eurostat) 14:50-15:10 Google Trends as data sources for forecasting Official Statistics , Di Battista Tonio (Università G. D'Annunzio, Chieti-Pescara) 15:10-15:30 Principal component analysis for distributional data , Antonio Irpino (Università della Campania Luigi Vanvitelli) C3 – Contributed session Classification methods Chair: Biagio Palumbo Room: Class room 2 14:30-14:50 Some Pitfalls in Variable Selection with Regression Trees , Anna Gottard (DiSIA - University of Florence) 14:50-15:10 SVM robustification by means of the Forward Search , Aldo Corbellini (Department of Economics and Management, University of Parma) 15:10-15:30 Identifying and representing clusters of spatial defects in microelectronics planar artefacts , Riccardo Borgoni (Università di Milano-Bicocca)

	<p>C4 – Contributed Session Applied risk measurement and prediction</p> <p>Chair: Antonio Lepore</p> <p>Room: Class room 3</p> <p>14:30-14:50 A full factorial Design of Experiments to optimise workload norms in case of shifting bottlenecks, Francesco Zammori (Dip. Ingegneria e Architettura, Università di Parma)</p> <p>14:50-15:10 Measuring cybersecurity risk, Silvia Angela Osmetti (Università Cattolica del Sacro Cuore, Milano)</p> <p>15:10-15:30 Insolvency prediction by deep learning, Agostino Di Ciaccio (Dept. of Statistics, University of Rome)</p>
15:30-16:30	<p>C5 – Contributed Session Application of Statistical Learning</p> <p>Chair: Luca Bortolussi</p> <p>Room: Auditorium</p> <p>15:30-15:50 A first tentative to introduce bootstrapping technique for the sensitivity analysis in the NDEA context, Claudio Pinto (University of Salerno)</p> <p>15:50-16:10 Nonparametric Classification of Directional Data through Depth Functions, Demni Houyem (BADEM, Tunis Business School, University of Tunis)</p> <p>16:10-16:30 Personal skills for graduates: size and sectors as recruitment factors, Andrea Marletta (University of Milano-Bicocca)</p> <p>C6 – Contributed Session Analysis of complex data</p> <p>Chair: Matteo Ruggiero</p> <p>Room: Class room 2</p> <p>15:30-15:50 Assessing plant cell ploidy through confocal image analysis methods, Ivan Arcangelo Sciascia (Universita' degli Studi di Torino)</p> <p>15:50-16:10 A Control Chart for Directional Data based on Data Depth, Abdaoui Asma (BADEM, Tunis Business School, University of Tunis)</p> <p>16:10-16:30 Spatial monitoring network selection in semiconductor manufacturing process, Diego Zappa (Università Cattolica del Sacro Cuore, Milano)</p>
16:30-17:00	<p><i>Coffee break</i></p> <p>Room: Common Room</p>
17:00-18:30	<p>Plenary Session The industrial perspective</p> <p>Organizers: Paola Cerchiello, Biagio Palumbo and Simone Vantini</p> <p>Session Chair: Biagio Palumbo</p>

	<p>Room: Auditorium</p> <p>17:00-17:25 Brilliant Factories ... How the information business is revolutionizing industrial companies, Francesco Del Greco (Avio Aero)</p> <p>17:25-17:50 Intelligent Predictive Maintenance based on data collection for rolling stock in Railway Industry, Giuseppe Giannini (Hitachi Rail Italy)</p> <p>17:50-18:15 The Challenges of Used Car Pricing, Maurizio Rossi (Brumbrum)</p> <p>18:15-18:30 Discussion</p>
18:30-20:00	<p><i>Welcome party</i></p> <p>Room: Common Room</p>

Friday 25 May 2018

09:00-09:50	<p>Keynote Lecture 2</p> <p>Room: Auditorium</p> <p>Session Chair: Antonio Pievatolo</p> <p>Alberto Ferrer-Riquelme (Dpt. of Applied Statistics, O.R. & Quality, Universidad Politecnica de Valencia, Spain), Potential of latent variables-based multivariate statistical methods for Data Science in Industry & Technology</p>
09:50-10:50	<p>S2 – Specialized Session Monitoring and Quality Control</p> <p>Organizers: Grazia Vicario and Biagio Palumbo</p> <p>Session Chair: Grazia Vicario</p> <p>Room: Auditorium</p> <p>09:50-10:10 Monitoring ship CO2 emissions from operating conditions via functional control charts and scalar-on-functional linear models, Christian Capezza (Christian Capezza, Department of Industrial Engineering, University of Naples Federico II)</p> <p>10:10-10:30 Novel solutions for process monitoring in Additive Manufacturing, Bianca Maria Colosimo (Department of Mechanical Engineering, Politecnico di Milano)</p> <p>10:30-10:50 An R Package for Retrospective Change-Point Detection, Giovanna Capizzi (Department of Statistical Sciences, University of Padua)</p> <p>S3 – Specialized Session Bayesian computation for Data Science</p> <p>Organizer: Antonio Canale</p> <p>Session Chair: Antonio Canale</p> <p>Room: Class room 3</p> <p>09:50-10:10 Informed Sub-Sampling MCMC: Approximate Bayesian Inference</p>

	<p>for Large Datasets, Nial Friel (University College Dublin)</p> <p>10:10-10:30 Learning Markov Equivalence Classes of Directed Acyclic Graphs: an Objective Bayes Approach, Stefano Peluso (Università Cattolica del Sacro Cuore, Milano)</p> <p>10:30-10:50 Scalable Importance Tempering and Bayesian Variable Selection, Giacomo Zanella (Bocconi University)</p> <p>C7 – Contributed Session Simulation and Heterogenous data</p> <p>Session Chair: Matteo Ruggiero</p> <p>Room: Class room 2</p> <p>09:50-10:10 Application of Machine Learning for decision support in Social Housing, Farida Mustafazed (KTP, New Castle University, UK)</p> <p>10:10-10:30 Simulation based Bias Correction Methods for Complex Models, Maria-Pia Victoria-Feser (Research Center for Statistics, University of Geneva)</p> <p>10:30-10:50 A "fingerprint" of a heterogeneous dataset, Matteo Spallanzani (Dept. Physics, Informatics and Mathematics, University of Modena and Reggio Emilia)</p>
10:50-11:20	<p><i>Coffee break</i></p> <p>Room: Common Room</p>
11:20-12:50	<p>Plenary Session The business perspective</p> <p>Organizers: Paola Cerchiello, Biagio Palumbo and Simone Vantini</p> <p>Session Chair: Simone Vantini</p> <p>Room: Auditorium</p> <p>11:20-11:45 Understanding Video Contents with Artificial Intelligence, Simone Bronzin (Metaliquid)</p> <p>11:45-12:10 Digital Transformation and Predictive Maintenance at Sirti, Vincenzo De Lisi (Sirti)</p> <p>12:10-12:35 From Anonymous Mobile Geolocation Data to Actionable Insights for Business, Carmelo Vecchio (Cuebiq)</p> <p>12:35-12:50 Discussion</p>
12:50-14:00	<p><i>Lunch break</i></p>
14:00-15:30	<p>Ore 14.00-15.30 Panel Discussion on Degrees and Masters in Data Science</p> <p>Chair: Nicola Torelli</p> <p>Room: Auditorium</p> <p>Monica Pratesi (President of the Italian Statistics Society (SIS), Marco Abate (Delegate of CUN (Consiglio Universitario Nazionale)), Francesco Sanna (Delegate of CUN).</p>

	Presentations of the Presidents of Master Degree, Three-year degree and Master in Data Science in Italy.
15:30-16:00	<i>Coffee break</i> Room: Common Room
16:00-17:30	Plenary Session The financial perspective Organizers: Paola Cerchiello, Biagio Palumbo and Simone Vantini Session Chair: Paola Cerchiello Room: Auditorium 16:00-16:25 Data Science in large corporations, a real-world experience in the financial sector , Daniele Amberti (Intesa Sanpaolo) 16:25-16:50 Empathy In Technology: Applied Data Science to Storytelling Personalization , Luca Bianchi (Neosperience) 16:50-17:15 Portfolio risk management: a statistical analysis , Andrea Calvi (ModeFinance) 17:15 17:30 Discussion
17:30-18:00	<i>Closure and Best Presentation (young Statistician) Award</i> Room: Auditorium