

# The 5<sup>th</sup> International Conference on machine Learning, Optimization & Data science – LOD 2019

Certosa Di Pontignano - Siena, Tuscany, Italy  
September 10-13, 2019

<https://lod2019.icas.xyz>

[lod@icas.xyz](mailto:lod@icas.xyz)

Final Version

**Patterns**  
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The *International Conference on machine Learning, Optimization, and Data Science - LOD* has established itself as a *premier interdisciplinary conference* in machine learning, computational optimization and data science. It provides an international forum for presentation of original multidisciplinary research results, as well as exchange and dissemination of innovative and practical development experiences. LOD Conference uses the formula of *25-minute presentations* for fruitful exchanges between authors and participants.

Proceedings by Springer – Lecture Notes in Computer Science. All accepted long papers **will be published in a volume of the series on Lecture Notes in Computer Science from Springer** after the conference.

LOD 2019 Best Paper Award. Springer sponsors the **LOD 2019 Best Paper Award** with a cash *prize* of EUR 1,000.

Certosa di Pontignano – Siena, Tuscany. The learning experience at the LOD conference will *not* stop once outside the lecture hall. The leisure time will not only represent a golden and crucial opportunity for extensive discussions with outstanding Faculties and excellent scientific networking interactions with colleagues, but also a rare opportunity to experience this retreat-like atmosphere in one of the most beautiful places on Earth. Hence the added value of the LOD conference in Tuscany will be the unique opportunity of a full immersion into the Tuscan traditions, arts, wines, and food making it an unforgettable experience of a lifetime.

Unique in the world are Tuscan wines, arts and local foods: a wide array of personalized activities can be arranged focused on the local excellence, according to each participant's or guest's interest. During participants' stay there will be ample time to arrange activities: should participants desire to engage in activities before the LOD conference.

## Registration

The registration desk will be located close to the Main Conference Room and will be open during the following hours:  
**Monday, September 9, 13:00 – 18:00**

Upon registration at the desk, you will receive your badge, vouchers, and conference materials. To facilitate the process please bring with you your registration confirmation. You are kindly requested to wear your name badge during all events of the conference.

**Poster Session:** the poster format for the presentation is A0 (118.9 cm high and 84.1 cm wide, respectively 46.8 x 33.1 inches). You need to print and bring with you the poster to the conference. Push tacks or tape will be provided at the conference to mount your poster to the board.

## Conference Venue

Certosa di Pontignano

Località Pontignano, 5 – 53019, Castelnuovo Berardenga (Siena) – Tuscany – Italy

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## Committee - LOD 2019

### **General Chairs:**

**Vincenzo Sciacca**, *Almawave, Italy*

**Renato Umeton**, *Department of Informatics, Dana-Farber Cancer Institute, Boston, MA, USA & MIT, Cambridge, MA, USA*

### **Program Chairs:**

**Giovanni Giuffrida**, *Neodata Group*

**Panos Pardalos**, *University of Florida, USA*

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**Giorgio Jansen**, *University of Cambridge, UK*

**Salvatore Danilo Riccio**, *Queen Mary University of London, UK*

### **Tutorial Session Chair:**

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### **Industrial Session Chairs:**

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**Marco Firrincieli**, *UniCredit R&D, Italy*

**Giovanni Giuffrida**, *Neodata Group*

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**Giuseppe Narzisi**, *New York University Tandon School of Engineering, USA, and New York Genome Center, USA*

**Salvatore Danilo Riccio**, *Queen Mary University of London, UK*

### **Steering Committee:**

**Giuseppe Nicosia**

**Panos Pardalos**

### **Program Committee:**

[More than 350 Program Committee members.](#)

## LOD 2019 Keynote Speakers

**Michael Bronstein**, *Imperial College London, UK*

“Deep learning on graphs and manifolds: going beyond Euclidean data”

**Marco Gori**, *University of Siena, Italy*

“Backpropagation and Lagrangian Multipliers – New Frontiers of Learning”

**Arthur Gretton**, *UCL, UK*

“A Kernel Critic for Generative Adversarial Networks”

**Arthur Guez**, *Google DeepMind, Montreal, UK*

“Rethinking planning in reinforcement learning”

**Kaisa Miettinen**, *University of Jyväskylä, Finland*

“Interactive Multiobjective Optimization in Decision Analytics with a Case Study”

**Panos Pardalos**, *Center for Applied Optimization, University of Florida, USA*

“Sustainable Interdependent Networks”

**Mauricio G. C. Resende**, *Amazon.com Research and University of Washington Seattle, Washington, USA*

“Biased random-key genetic algorithms – Learning intelligent solutions from random building blocks”

**Raniero Romagnoli** and **Vincenzo Sciacca**, *Almawave, Italy*

“Building Iride: how to mix deep learning and Ontologies techniques to understand language”

**Richard E. Turner**, *Department of Engineering, University of Cambridge, UK*

“Extending the frontiers of deep learning using probabilistic modelling”

### Keynote Speakers of the previous editions:

**Jörg Bornschein**, DeepMind, London, UK

**Nello Cristianini**, University of Bristol, UK

**Peter Flach**, University of Bristol, UK, and EiC of the Machine Learning Journal

**Yi-Ke Guo**, Imperial College London, UK

**George Karypis**, University of Minnesota, USA

**Vipin Kumar**, University of Minnesota, USA

**George Michailidis**, University of Florida, USA

**Stephen Muggleton**, Imperial College London, UK

**Panos Pardalos**, Center for Applied Optimization, University of Florida, USA

**Jun Pei**, Hefei University of Technology, China

**Tomaso Poggio**, MIT, USA

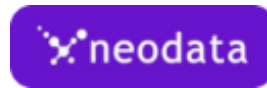
**Andrey Raygorodsky**, Moscow Institute of Physics and Technology, Russia

**Ruslan Salakhutdinov**, Carnegie Mellon University, USA, and AI Research at Apple

**Vincenzo Sciacca**, IBM, Italy

**My Thai**, University of Florida, USA

LOD 2019 Sponsors



**LOD 2019 Best Paper Award**

Springer sponsors the **LOD 2019 Best Paper Award** with a cash *prize* of EUR 1,000

**LOD 2018 Best Paper Award**

**Calibrating the Classifier: Siamese Neural Network Architecture for End-to-End Arousal Recognition from ECG**

**Andrea Patanè\*** and Marta Kwiatkowska\*

\*Department of Computer Science, University of Oxford, UK

**LOD 2017 Best Paper Award**

**Recipes for Translating Big Data Machine Reading to Executable Cellular Signaling Models**

**Khaled Sayed\***, Cheryl Telmer\*\*, Adam Butchy\* & Natasa Miskov-Zivanov\*

\*University of Pittsburgh, USA

\*\* Carnegie Mellon University, USA

**LOD 2016 Best Paper Award**

**Machine Learning: Multi-site Evidence-based Best Practice Discovery**

**Eva Lee**, Yuanbo Wang and Matthew Hagen

*Eva K. Lee, Professor Director, Center for Operations Research in Medicine and HealthCare H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta, GA, USA*

**LOD 2015 Best Paper Award**

**Learning with discrete least squares on multivariate polynomial spaces using evaluations at random or low-discrepancy point sets**

**Giovanni Migliorati**

*Ecole Polytechnique Fédérale de Lausanne – EPFL, Lausanne, Switzerland*

From	To
09:00	09:25
09:25	09:50
09:55	10:20
10:20	10:45
10:45	11:25
11:25	11:50
11:50	12:15
12:15	12:40
12:40	13:05
13:05	15:00
15:00	15:25
15:25	15:50
15:55	16:20
16:20	16:45
16:45	17:25
17:25	17:50
17:50	18:15
18:15	18:40
18:40	19:05
19:05	19:30
19:30	21:30

TUESDAY, 10	
<b>Michael Bronstein</b>	
Deep Learning	Data Science Session (1)
<b>Coffee Break</b>	
Deep Learning	Data Science Session (1)
<b>Lunch</b>	
<b>Arthur Guez</b>	
Derivative-Free Optimization	NLP
<b>Coffee Break + Group Pic.</b>	
<b>Raniero Romagnoli and Vincenzo Sciacca</b>	
<b>Poster Session</b>	
<b>Dinner</b>	

WEDNESDAY, 11	
<b>Richard E. Turner</b>	
Data Science Session (2)	Combinatorial + Graphs
<b>Coffee Break</b>	
Industrial Session – LOD 2020 Challenge	Combinatorial + Graphs
Unsupervised Learning	Combinatorial + Graphs
<b>Lunch</b>	
Industrial Session on Machine Learning and Data Science	Combinatorial + Graphs
<b>Coffee Break</b>	
Industrial Session on Machine Learning and Data Science	Data Science Session (3)
<b>Coffee Break</b>	
Industrial Session on Machine Learning and Data Science	Oral Presentations
<b>Free Time</b>	
<b>Dinner</b>	

THURSDAY, 12	
<b>Kaisa Miettinen</b>	
Prediction and Forecasting	Multi-Objective Optimization
<b>Coffee Break</b>	
Prediction	Multi-Obj. Opt.
Data Science Session (4)	Application In Medicine
<b>Lunch</b>	
<b>Arthur Gretton</b>	
Semisupervised Learning	Data Science Session (5)
<b>Coffee Break</b>	
<b>Marco Gori</b>	
Short Paper Session	Data Science Session (6)
<b>Free Time</b>	
<b>Dinner</b>	

FRIDAY, 13	
<b>Mauricio G. C. Resende</b>	
<b>Panos Pardalos</b>	
<b>Coffee Break</b>	
Supervised Learning	Data Science Session (7)
<b>Free Time</b>	
<b>Lunch</b>	
<b>Tour + Dinner</b>	

**Tuesday, September 10**

08:50 – 09:00 Opening

Keynote Lecture 1 – Room: [Sala Bracci](#)

Chair: [Giuseppe Nicosia](#)

09:00 – 09:50 ***“Deep learning on graphs and manifolds: going beyond Euclidean data”***

**Michael Bronstein, Imperial College London, UK**

<p>Session 1.1A – Room: <a href="#">Sala Bracci</a> Topic: <i>Deep Learning</i> Chair: <a href="#">Giuseppe Nicosia</a></p>	<p>Session 1.1B – Room: <a href="#">Sala Veranda</a> Topic: <i>Data Science Session (1)</i> Chair: <a href="#">Giorgio Jansen</a></p>
<p>09:55 – 10:20 <b><a href="#">Sean Tao</a></b>: <i>“Deep Neural Network Ensembles”</i></p>	<p>09:55 – 10:20 <b><a href="#">Ram Bahadur Gurung</a></b>: <i>“Adapted Random Survival Forest for Histograms to Analyze NOx Sensor Failure in Heavy Trucks”</i></p>
<p>10:20 – 10:45 <b><a href="#">Shokoufeh Monjezi Kouchak</a></b> and Ashraf Gaffar: <i>“Driver Distraction Detection Using Deep Neural Network”</i></p>	<p>10:20 – 10:45 <b><a href="#">Gail Gilboa Freedman</a></b>, Alon Patelsky and Tal Sheldon: <i>“LIA: A Label-Independent Algorithm for Feature Selection for Supervised Learning”</i></p>
<p>10:45 – 11:25 <b>Coffee Break</b></p>	
<p>Session 1.2A – Room: <a href="#">Sala Bracci</a> Topic: <i>Deep Learning</i> Chair: <a href="#">Erik Berglund</a></p>	<p>Session 1.2B – Room: <a href="#">Sala Veranda</a> Topic: <i>Data Science Session (1)</i> Chair: <a href="#">Gail Gilboa Freedman</a></p>
<p>11:25 – 11:50 <b><a href="#">Vittorio Mazzia</a>, <a href="#">Angelo Tartaglia</a></b>, Dario Gandini and Marcello Chiaberge: <i>“Deep Learning Algorithms for Complex Patterns Recognition in Ultrasonic Sensors Arrays”</i></p>	<p>11:25 – 11:50 <b><a href="#">Marius Geitle</a></b> and Roland Olsson: <i>“A New Baseline for Automated Hyper-Parameter Optimization”</i></p>
<p>11:50 – 12:15 <b><a href="#">Patrik Reizinger</a></b> and Bálint Gyires-Tóth: <i>“Stochastic Weight Matrix-based Regularization Methods for Deep Neural Networks”</i></p>	<p>11:50 – 12:15 <b><a href="#">Dave McEwan</a></b> and Jose Nunez-Yanez: <i>“Relationship Detection Measures for Binary SoC Data”</i></p>
<p>12:15 – 12:40 Valentina Ghidini, <b><a href="#">Alan Perotti</a></b> and Rossano Schifanella: <i>“Quantitative and Ontology-Based Comparison of Explanations for Image Classification”</i></p>	<p>12:15 – 12:40 <b><a href="#">Aljohara Almulhim</a></b>, Vachik S. Dave and Mohammad Al Hasan: <i>“Network Alignment using Graphlet Signature and High Order Proximity”</i></p>
<p>12:40 – 13:05 <b><a href="#">Andrea Asperti</a></b>: <i>“About generative aspects of Variational Autoencoders”</i></p>	<p>12:40 – 13:05 <b><a href="#">Abbas Haider</a></b>, Hui Wang, Bryan Scotney and Glenn Hawe: <i>“Effect of Market Spread over Reinforcement Learning based Market Maker”</i></p>

13:05 – 15:00 **Lunch**

Keynote Lecture 2 – Room: [Sala Bracci](#)

Chair: *Giuseppe Nicosia*

15:00 – 15:50 ***“Rethinking planning in reinforcement learning”***  
**Arthur Guez**, *Google DeepMind, Montreal, UK*

Session 2A – Room: <a href="#">Sala Bracci</a> Topic: <i>Derivative-Free Optimization</i> Chair: <i>Tinkle Chugh</i>	Session 2B – Room: <a href="#">Sala Veranda</a> Topic: <i>Natural Language Processing</i> Chair: <i>Nickolay Knyazev</i>
15:55 – 16:20 <b>Zelda Zabinsky</b> , Giulia Pedrielli and Hao Huang: <i>“A Framework for Multi-fidelity Modeling in Global Optimization Approaches”</i>	15:55 – 16:20 <b>Apostol Vassilev</b> : <i>“BowTie - a deep learning feedforward neural network for sentiment analysis”</i>
16:20 – 16:45 Jaqueline Angelo, Eduardo Krempser and Helio Barbosa (Speaker: <b>Heder Bernardino</b> ): <i>“Performance Evaluation of Local Surrogate Models in Bilevel Optimization”</i>	16:20 – 16:45 Tony Beaumont and <b>Twba Al-Shaghdari</b> : <i>“To What Extent Can Text Classification Help with Making Inferences About Students' Understanding”</i>

16:45 – 17:25 Coffee Break + **Group Picture (@16:45 in the main cloister near the well)**

Keynote Lecture 3 – Room: [Sala Bracci](#)

Chair: *Giuseppe Nicosia*

17:25 – 18:15 ***“Building Iride: how to mix deep learning and Ontologies techniques to understand language”***  
**Raniero Romagnoli** and **Vincenzo Sciacca**, *Almawave, Italy*

18:15 – 19:30 **Poster Session (see next page for details)**

19:30 – 21:30 **Dinner**

## Poster Session

Margarita Zaleshina and Alexander Zaleshin: *"Identification of sustainable locations in pigeon flights using flow simulation method"*

Juan Pablo Prada Salcedo and Thomas Dandekar: *"Neuron nuclei segmentation from electron microscopy images"*

Dong Wang and Mats Tysklind: *"Implementation of machine learning methods for better process control in Umeå wastewater treatment plant"*

Sudipto Pal: *"Contextual Outlier Detection and Treatment in High-Dimension Data including Categorical Variables"*

David Medina and Alvaro Olivera-Nappa: *"DMAKit: A web service based in a python Library for the analysis of high-dimensional datasets using data mining and pattern recognition techniques"*

Nezahat Başeğmez and Mahmut Ali Gökçe: *"A Novel Combined XGBOOST Regressor and Optimization for Fabric Cutting: A Real-Life Application"*

Ghania Khensous, Abdallah Chouarfia and Bernard Maigret: *"A Cuckoo Search Algorithm for the Flexible Protein-Ligand Docking Problem"*

Jacob Engelbrecht: *"Using statistical models and machine learning for property valuation by the Danish taxation authorities"*

Ju-Won Kim: *"MFL and multi-step pattern-recognition based automated NDE method for escalator steel chain diagnosis"*

Sheena Kohli: *"Analyzing and Visualizing Marine Data using Big Data Technique"*

Nickolay Knyazev: *"Linear regression trees for process optimization"*

Makoto Ohki: *"Many-Objective Evolutionary Programming and A Benchmark Problem for It"*

Igor Griva: *"Analyzing data with Fast Projected Gradient method"*

Soumen Manna, Omar Faisal and Ajay Kulkarni: *"In search of the best ML Model for multiclass class-imbalanced data"*

Laurel McClure: *"THE PRIME/NON PRIME RELATIONSHIP: A new efficient system of deterministic factor generation and primality testing"*

Wednesday, September 11

Keynote Lecture 4 – Room: [Sala Bracci](#)

Chair: *Giuseppe Nicosia*

09:00 – 09:50 **“Extending the frontiers of deep learning using probabilistic modelling”**  
**Richard E. Turner**, Department of Engineering, University of Cambridge, UK

<p>Session 3A – Room: <a href="#">Sala Bracci</a>  Topic: <i>Data Science Session (2)</i>  Chair: <i>Giovanni Giuffrida</i></p>	<p>Session 3B – Room: <a href="#">Sala Veranda</a>  Topic: <i>Combinatorial &amp; Graphs</i>  Chair: <i>Nikolaus Frohner</i></p>
<p>09:55 – 10:20 <b>Marko Djukanovic</b>, Günther Raidl and Christian Blum: “A Beam Search for the Longest Common Subsequence Problem Guided by a Novel Approximate Expected Length Calculation”</p>	<p>09:55 – 10:20 Lukas Bach, Carlo Mannino and <b>Giorgio Sartor</b>: “Combinatorial Learning in Traffic Management”</p>
<p>10:20 – 10:45 <b>Yannis Marinakis</b> and Magdalene Marinaki: “An Adaptive Parameter Free Particle Swarm Optimization Algorithm for the Permutation Flowshop Scheduling Problem”</p>	<p>10:20 – 10:45 José Eduardo da Silva, Lucas de Souza and <b>Heder Bernardino</b>: “Cartesian Genetic Programming with Guided and Single Active Mutations for Designing Combinational Logic Circuits”</p>

10:45 – 11:25 Coffee Break

LOD 2020 Challenge – Room: Sala: [Sala Bracci](#)

Chair: *Giovanni Giuffrida*

11:25 – 12:15 Industrial Session – LOD 2020 Challenge

<p>Session 4A – Room: <a href="#">Sala Bracci</a>  Topic: <i>Unsupervised Learning</i>  Chair: <i>Giuseppe Nicosia</i></p>	<p>Session 4B – Room: <a href="#">Sala Veranda</a>  Topic: <i>Combinatorial &amp; Graphs</i>  Chair: <i>Marko Djukanovic</i></p>
<p>12:20 – 12:45 <b>George Michailidis</b>: “Inferring Regulatory Networks using Partial Prior Topological Ordering Information”</p>	<p>12:20 – 12:45 <b>Cristina Mayr</b>, Claudio Rizzo and Eduardo Grampín: “Designing an Optimal and Resilient iBGP Overlay with extended ORRTD”</p>
<p>12:45 – 13:10 <b>Toshimitsu Aritake</b> and Noboru Murata: “Learning Scale and Shift-Invariant Dictionary for Sparse Representation”</p>	<p>12:45 – 13:10 <b>Nicole Rosenstock</b>, Juan Piccini, Guillermo Rela, Pablo Romero and Franco Robledo: “GRASP Heuristics for the Stochastic Weighted Graph Fragmentation Problem”</p>

13:10 – 15:00 Lunch

<p>Session 5A – Room: <u>Sala Bracci</u>  Industrial Session on Machine Learning and Data Science  Chair: Giovanni Giuffrida</p>	<p>Session 5.1B – Room: <u>Sala Veranda</u>  Topic: Combinatorial &amp; Graphs  Chair: George Michailidis</p>
<p>15:00 – 15:25 <b>Ami Tavory</b>: “Unsupervised Estimation of Principal Component Dimensions through the Principle of Minimum Distance Length”</p>	<p>15:00 – 15:25 <b>Guillermo Rela</b>, Pablo Romero and Franco Robledo: “Uniformly Most-Reliable Graphs and Antiholes”</p>
<p>15:25 – 15:50 <b>Erik Berglund</b>: “Modelling chaotic time series using recursive deep self-organising neural networks”</p>	<p>15:25 – 15:50 <b>Nikolaus Frohner</b> and Günther Raidl: “Merging Quality Estimation for BDDs with Binary Classifiers”</p>
	<p>Session 5.2B – Room: <u>Sala Veranda</u>  Topic: Data Science Session (3)  Chair: Vincenzo Sciacca</p>
<p>15:50 – 16:15 Stéphan Cléménçon and <b>Robin Vogel</b>: “On Tree-based Methods for Similarity Learning”</p>	<p>15:50 – 16:15 <b>Yuriy Mikheev</b>: “The measure of regularities recognition applied to the supervised classification task”</p>
<p>16:15 – 16:40 <b>Stefano De Blasi</b>: “Active Learning Approach for Safe Process Parameter Tuning”</p>	<p>16:15 – 16:40 <b>Jamolbek Mattiev</b> and Branko Kavšek: “Simple and Accurate Classification Method Based on Class Association Rules Performs Well on Well-known Datasets”</p>

16:40 – 17:20 Coffee Break

<p>Session 6A – Room: <u>Sala Bracci</u>  Industrial Session on Machine Learning and Data Science  Chair: Nickolay Knyazev</p>	<p>Session 6B – Room: <u>Sala Veranda</u>  Topic: Oral Presentations  Chair: Salvatore Danilo Riccio</p>
<p>17:20 – 17:45 <b>Anders Sjöberg</b>, Emil Gustavsson, Ashok Chaitanya Koppisetty and Mats Jirstrand: “Federated Learning of Deep Neural Decision Forests”</p>	<p>17:20 – 17:35 <b>Chi-Chang Chang</b>: “Ensemble Feature Learning for Predicting Risk Factors of Secondary Cancer”  17:35 – 17:50 <b>Katharina Bieker</b>: “Deep Learning and Model Predictive Control for a Flow Control Problem”</p>

<p>17:45 – 18:10 <b>Eva Jabbar</b>, Philippe Besse, Jean-Michel Loubes and Christophe Merle: <i>“Conditional Anomaly Detection for Quality and Productivity Improvement of Electronics Manufacturing Systems”</i></p>	<p>17:50 – 18:05 <b>Murat Kirtay</b>, Matteo Priorelli, Ugo Albanese, Lorenzo Vannucci, Cecilia Laschi and Egidio Falotico: <i>“The Neurorobotics Platform as a virtual environment for learning agents in the context of spatial navigation experiments”</i></p>
<p>18:10 – 18:35 <b>David Jaidan</b>, Maxime Carrere, Zakaria Chemli and Rémi Poisvert: <i>“Data Anonymization for Privacy aware Machine Learning”</i></p>	<p>18:05 – 18:20 <b>Ray Chou</b>, Tso-Jung Yen and Yu-Min Yen: <i>“Macroeconomic Forecasting Using Approximate Factor Models with Outliers”</i>  18:20 – 18:35 <b>Thibaut Vidal</b>, Florian Arnold, Italo Santana and Kenneth Sörensen: <i>“Mining frequent patterns to drive the exploration of high-order neighborhoods”</i></p>
<p>18:35 – 19:00 <b>Thomas Jatschka</b>, Tobias Rodemann and Günther Raidl: <i>“Exploiting Similar Behavior of Users in a Cooperative Optimization Approach for Distributing Service Points in Mobility Applications”</i></p>	

19:00 – 19:30 Free Time

19:30 – 21:30 Dinner

Thursday, September 12

Keynote Lecture 5 – Room: [Sala Bracci](#)

Chair: [Panos Pardalos](#)

09:00 – 09:50 **“Interactive Multiobjective Optimization in Decision Analytics with a Case Study”**  
[Kaisa Miettinen](#), *University of Jyväskylä, Finland*

<p>Session 7A – Room: <a href="#">Sala Bracci</a>  Topic: <i>Prediction and Forecasting</i>  Chair: <i>Fabio Fabris</i></p>	<p>Session 7B – Room: <a href="#">Sala Veranda</a>  Topic: <i>Multi-Objective Optimization</i>  Chair: <i>Giorgio Sartor</i></p>
<p>09:55 – 10:20 <b><a href="#">Anasse Bari</a>, <a href="#">Rafael Moraes</a></b> and Jiachen Zhu: <i>“Restaurant Health Inspections and Crime Predict Real Estate Market in NYC”</i></p>	<p>09:55 – 10:20 <b><a href="#">Tinkle Chugh</a></b>, Alma Rahat and Pramudita Satria Palar: <i>“Trading-off Data Fit and Complexity in Training Gaussian Processes with Multiple Kernels”</i></p>
<p>10:20 – 10:45 <b><a href="#">Federico Bianchi</a></b>, Alberto Castellini, Pietro Tarocco and Alessandro Farinelli: <i>“Load Forecasting in District Heating Networks: Model Comparison on a Real-World Case Study”</i></p>	<p>10:20 – 10:45 Leandro Lima, <b><a href="#">Heder Bernardino</a></b> and Helio Barbosa: <i>“Designing Combinational Circuits Using a Multi-objective Cartesian Genetic Programming with Adaptive Population Size”</i></p>
<p>10:45 – 11:25 <b>Coffee Break</b></p>	
<p>11:25 – 11:50 <b><a href="#">Carola Gajek</a></b>, Alexander Schiendorfer and Wolfgang Reif: <i>“A Chained Neural Network Model for Photovoltaic Power Forecast”</i></p>	<p>11:25 – 11:50 <b><a href="#">Deyan Dyankov</a>, <a href="#">Salvatore Danilo Riccio</a></b>, Giuseppe Di Fatta and Giuseppe Nicosia: <i>“Multi-Task Learning by Pareto Optimality”</i></p>

<p>Session 8A – Room: <a href="#">Sala Bracci</a>  Topic: <i>Data Science Session (4)</i>  Chair: <i>Abbas Haider</i></p>	<p>Session 8B – Room: <a href="#">Sala Veranda</a>  Topic: <i>Application in Medicine</i>  Chair: <i>Hong-Bo Xie</i></p>
<p>11:50 – 12:15 Clint Pazhayidam George, Wei Xia and <b><a href="#">George Michailidis</a></b>: <i>“Analyses of Multi-collection Corpora via Compound Topic Modeling”</i></p>	<p>11:50 – 12:15 <b><a href="#">Rosario Delgado</a></b>, J. David Nuñez-Gonzalez, Juan Carlos Yébenes and Angel Lavado: <i>“Vital prognosis of patients in intensive care units using an Ensemble of Bayesian Classifiers”</i></p>
<p>12:15 – 12:40 <b><a href="#">Elaheh Sobhani</a></b>, Pierre Comon, Christian Jutten and Massoud Babaie-Zadeh: <i>“Text mining with constrained tensor decomposition”</i></p>	<p>12:15 – 12:40 <b><a href="#">Marta Lopes</a></b>, André Veríssimo, Eunice Carrasquinha and Susana Vinga: <i>“On the role of hub and orphan genes in the diagnosis of breast invasive carcinoma”</i></p>
<p>12:40 – 13:05 <b><a href="#">Gianluca Bontempi</a></b>: <i>“The induction problem: a machine learning vindication argument”</i></p>	<p>12:40 – 13:05 <b><a href="#">Thomas Philip Runarsson</a></b>: <i>“Approximating Probabilistic Constraints for Surgery Scheduling using Neural Networks”</i></p>

13:05 – 15:00 **Lunch**

Keynote Lecture 6 – Room: [Sala Bracci](#)

Chair: *Vincenzo Sciacca*

15:00 – 15:50 **“A Kernel Critic for Generative Adversarial Networks”**

**Arthur Gretton, UCL, UK**

<p>Session 9A – Room: <a href="#">Sala Bracci</a>  Topic: <i>Semisupervised Learning</i>  Chair: <i>Erik Berglund</i></p>	<p>Session 9B – Room: <a href="#">Sala Palio</a>  Topic: <i>Data Science Session (5)</i>  Chair: <i>Marius Geitle</i></p>
<p>15:55 – 16:20 <b>Hong-Bo Xie</b>, Caoyuan Li, Richard Xu and Kerrie Mengersen: <i>“Robust kernelized Bayesian matrix factorization for video background/foreground separation”</i></p>	<p>15:55 – 16:20 <b>Robert Kłopotek</b> and Mieczysław Kłopotek: <i>“On Probabilistic k-Richness of the k-Means Algorithms”</i></p>
<p>16:20 – 16:45 <b>Li-Chia Yeh</b> and Chung-Chin Lu: <i>“Parameter Optimization of Polynomial Kernel SVM from miniCV”</i></p>	<p>16:20 – 16:45 <b>Christoph Lohrmann</b> and Pasi Luukka: <i>“Using clustering for supervised feature selection to detect relevant features”</i></p>

16:45 – 17:25 **Coffee Break**

Keynote Lecture 7 – Room: [Sala Bracci](#)

Chair: *Vincenzo Sciacca*

17:25 – 18:15 **“Backpropagation and Lagrangian Multipliers – New Frontiers of Learning”**

**Marco Gori, University of Siena, Italy**

<p>Session 10A – Room: <a href="#">Sala Bracci</a>  Topic: <i>Short Paper Session</i>  Chair: <i>Salvatore Danilo Riccio</i></p>	<p>Session 10B – Room: <a href="#">Sala Palio</a>  Topic: <i>Data Science Session (6)</i>  Chair: <i>Nickolay Knyazev</i></p>
<p>18:15 – 18:30 <b>Sergi Mus</b>, Norma Gutierréz, Rubén Tous, Beatriz Otero, Leonel Cruz, David Llácer, Leonardo Alvarado and Otilio Rojas: <i>“Long Short-Term Memory Networks for Earthquake Detection in Venezuelan Regions”</i></p> <p>18:30 – 18:45 <b>Andreas Griewank</b> and Angel Rojas: <i>“Treating Artificial Neural Net Training as a Nonsmooth Global Optimization Problem”</i></p>	<p>18:15 – 18:40 <b>Vladimir Shenmaier</b>: <i>“A Structural Theorem for Center-Based Clustering in High-Dimensional Euclidean Space”</i></p>
<p>18:45 – 19:00 <b>Jonatan Poveda-Pena</b> and Rubén Tous: <i>“Zero-Shot Fashion Products Clustering on Social Image Streams”</i></p>	<p>18:40 – 19:05 Anastasia Stepanova, Sergei Mironov, <b>Sergei Sidorov</b> and Alexey Faizliev: <i>“Modification of the k-MXT Algorithm and Its Application to the Geotagged Data Clustering”</i></p>

19:05 – 19:30 **Free Time**

19:30 – 21:30 **Dinner**

**Friday, September 13**

Keynote Lecture 8 – Room: [Sala Bracci](#)  
Chair: *Vincenzo Sciacca*

09:00 – 09:50 **“Biased random-key genetic algorithms – Learning intelligent solutions from random building blocks”**  
**Mauricio G. C. Resende**, *Amazon.com Research and University of Washington Seattle, Washington, USA*

Keynote Lecture 9 – Room: [Sala Bracci](#)  
Chair: *Vincenzo Sciacca*

09:50 – 10:40 **“Sustainable Interdependent Networks”**  
**Panos Pardalos**, *Center for Applied Optimization, University of Florida*

10:40 – 11:20 Coffee Break

Session 11A – Room: <a href="#">Sala Bracci</a> Topic: Supervised Learning Chair: <i>Salvatore Danilo Riccio</i>	Session 11B – Room: <a href="#">Sala Veranda</a> Topic: <i>Data Science Session (7)</i> Chair: <i>Murat Kirtay</i>
11:20 – 11:45 <b>Fabio Fabris</b> and Alex Freitas: <i>“Analysing the Overfit of the auto-sklearn Automated Machine Learning Tool”</i>	11:20 – 11:45 <b>Rishabh Agrawal</b> and <b>Paridhi Kothari</b> : <i>“CoPASample: A Heuristics based Covariance Preserving Data Augmentation”</i>
11:45 – 12:10 Giorgio Gnecco and <b>Federico Ntarelli</b> : <i>“Optimal trade-off between sample size and precision of supervision for the fixed effects panel data model”</i>	11:45 – 12:10 <b>Mustafa Misir</b> : <i>“Active Matrix Completion for Algorithm Selection”</i>

12:10 – 13:00 Free Time

13:00 – 14:45 Lunch

**14:45 Guided Tour in Siena + Dinner**

Please go next to Certosa reception at 14:45 (**bus will depart at 15:00**).

19:30 Dinner: “*Contrada La Selva*”. Address: “*Via Vallepiazza, 53100, Siena*”

If you have any problems during the tour (e.g. missed the bus or got lost in Siena) please contact [danilo.icas@gmail.com](mailto:danilo.icas@gmail.com)