

Chapter	paper ID	Track	Title	Authors
Thursday Track 1				
T.1.1			Special Session on Finance and Cooperation Data Modelling	
			<i>Chair: Peter Mitic</i>	
20	38	7	A Metric Framework for quantifying Data Concentration	Peter Mitic
50	117	1	Detection of Abnormal Load Consumption in the Power Grid Using Clustering and Statistical Analysis	Matúš Cuper, Marek Lóderer and Viera Rozinajová
T.1.2			Clustering	
			<i>Chair: Alfredo Cuzzocrea</i>	
34	86	1	Joining Items Clustering and Users Clustering for Evidential Collaborative Filtering	Raoua Abdelkhalek, Imen Boukhris and Zied Elouedi
36	88	1	Toward A Framework for Seasonal Time Series Forecasting Using Clustering	Colin Leverger, Simon Malinowski, Thomas Guyet, Vincent Lemaire, Alexis Bondu and Alexandre Termier
37	89	1	An Evidential Imprecise Answer Aggregation Approach based on Worker Clustering	Lina Abassi and Imen Boukhris
54	133	1	Meta-learning Based Evolutionary Clustering Algorithm	Dmitry Tomp, Sergey Muravyov, Andrey Filchenkov and Vladimir Parfenov
55	136	1	Fast tree-based classification via homogeneous clustering	George Pardis, Konstantinos I. Diamantaras, Stefanos Ougiaroglou and Georgios Evangelidis
16	36	6	A Method based on Filter Bank Common Spatial Pattern for Multiclass Motor Imagery BCI	Ziqing Xia, Likun Xia and Ming Ma
T.1.4			Special Session on Machine Learning towards Smarter Multimodal Systems	
			<i>Chairs: Rui Neves Madeira, Susana Nascimento</i>	
4	145	3	New Interfaces for Classifying Performance Gestures in Music	Chris Rhodes, Richard Allmendinger and Ricardo Climent
3	139	3	Multimodal Web Based Video Annotator with Real-Time Human Pose Estimation	Rui Rodrigues, Rui Neves Madeira, Nuno Correia, Carla Fernandes and Sara Ribeiro
25	62	1	Deep learning and Sensor Fusion Methods for Studying Gait Changes under Cognitive Load in Males and Females	Abdullah S Alharthi and Krikor B Ozanyan
33	85	1	A Multimodal Approach to Image Sentiment Analysis	António Gaspar and Luís A. Alexandre
T.1.5			Special Session on Machine Learning in Automatic Control	
			<i>Chairs: Matilde Santos, Juan Victores</i>	
57	148	1	New Internal Clustering Evaluation Index Based on Line Segments	Juan Carlos Rojas Thomas and Matilde Santos Peñas
17	103	6	Safe Deep Neural Network-driven Autonomous Vehicles Using Software Safety Cages	Sampo Kuutti, Richard Bowden, Harita Joshi, Robert de Temple and Saber Fallah
18	138	6	Wave and viscous resistance estimation by NN	D. Marón and M. Santos
19	147	6	Neural controller of UAVs with inertia variations	J. Enrique Sierra-Garcia, Matilde Santos and Juan G. Victores
T.1.3/6			Special Session on Machine Learning Algorithms for Hard Problems	
			<i>Chair: Pawel Ksieniewicz</i>	
35	122	9	A genetic-based ensemble learning applied to imbalanced data classification	Jakub Klikowski, Paweł Ksieniewicz and Michał Wozniak

31	97	9	SMOTE Algorithm Variations in Balancing Data Streams	Bogdan Gulowaty and Paweł Ksieniewicz
32	107	9	Multi-Class Text Complexity Evaluation via Deep Neural Networks	Alfredo Cuzzocrea, Giosué Lo Bosco, Giovanni Pilato and Daniele Schicchi
33	113	9	Imbalance reduction techniques applied to ECG classification problem	Jędrzej Kozal and Paweł Ksieniewicz
34	120	9	Machine Learning Methods for Fake News Classification	Paweł Ksieniewicz, Michał Choraś, Rafał Kozik and Michał Woźniak
30	48	9	Using Prior Knowledge to Facilitate Computational Reading of Arabic Calligraphy	Seetah ALSalamah, Riza Batista-Navarro and Ross D. King
36	137	9	The feasibility of deep learning use for adversarial model extraction in the cybersecurity domain	Michał Choraś, Marek Pawlicki and Rafał Kozik
20	53	1	Comparative Analysis of Approaches to Building Medical Dialog Systems in Russian	Aleksandra Vatian, Natalia Dobrenko, Nikolai Andreev, Aleksandr Nemerovskii, Anastasia Nevochhikova and Natalia Gusarova
Thursday Track 2				
T.2.1	Image Processing			
			<i>Chair: Richard Hankins</i>	
27	65	1	Image Quality Constrained GAN for Super-Resolution	Jingwen Su, Yao Peng and Hujun Yin
51	118	1	Deep Convolutional Neural Networks Based on Image Data Augmentation for Visual Object Recognition	Khaoula Jayech
T.2.2	ML for Social Interactions			
			<i>Chair: Paulo Novais</i>	
7	15	1	Using Deep Learning for Ordinal Classification of Mobile Marketing User Conversion	Luís Miguel Matos, Paulo Cortez, Rui Castro Mendes and Antoine Moreau
44	101	1	Do you really follow them? Automatic detection of credulous Twitter users	Alessandro Balestrucci, Rocco De Nicola, Marinella Petrocchi and Catia Trubiani
28	66	1	Use Case Prediction using Product Reviews Text Classification	Tinashe Wamambo, Cristina Luca and Arooj Fatima
45	104	1	Automatic Ground Truth Dataset Creation for Fake News Detection in Social Media	Danae Pla Karidi, Harry Nakos and Yannis Stavrakas
14	35	1	Users Intention based on Twitter Features using Text Analytics	Qadri Mishael, Aladdin Ayeshe and Iryna Yevseyeva
26	64	1	Towards a robotic personal trainer for the elderly	J. A. Rincon, A. Costa, P. Novais, V. Julian and C. Carrascosa
T.2.3/4	Special Session on Data Selection in Machine Learning			
			<i>Chair: Antonio J. Tallón-Ballesteros</i>	
5	49	4	Classifying Ransomware Using Machine Learning Algorithms	Samuel Egunjobi, Simon Parkinson and Andrew Crampton
6	51	4	Artificial Neural Networks in Mathematical Mini-Games for Automatic Students Learning Styles Identification: A First Approach	Richard Torres-Molina, Jorge Banda-Almeida and Lorena Guachi-Guachi
7	54	4	The Use of Unified Activity Records to Predict Requests Made by Applications for External Services	Maciej Grzenda, Robert Kunicki and Jarosław Legierski
38	91	4	Combining Machine Learning and Classical Optimization Techniques in Vehicle to Vehicle Communication network	Mutasem Hamdan and Khairi Hamdi
9	146	4	Multitemporal Aerial Image Registration Using Semantic Features	Ananya Gupta, Yao Peng, Simon Watson and Hujun Yin

18	50	1	A Data-driven Approach to Automatic Extraction of Professional Figure Profiles from Résumés	Alessandro Bondielli and Francesco Marcelloni
3	8	1	Optimization of the numeric and categorical attribute weights in KAMILA mixed data clustering algorithm	Nádia Junqueira Martarelli and Marcelo Seido Nagano
4	11	1	Meaningful Data Sampling for a Faithful Local Explanation Method	Peyman Rasouli and Ingrid Chieh Yu
T.2.5/6		Applications of ML		
			<i>Chair: Ramón Moreno</i>	
21	55	1	Tracking Position and Status of Electric Control Switches Based on YOLO Detector	Xingang Mou, Jian Cui, Hujun Yin and Xiao Zhou
23	58	1	Transfer Knowledge between Sub-regions for Traffic Prediction using Deep Learning Method	Yi Ren and Kunqing Xie
41	95	1	A Deep Learning-based Surface Defect Inspection System for Smartphone Glass	Gwang-Myong Go, Seok-Jun Bu and Sung-Bae Cho
24	59	1	Global Q-Learning Approach for Power Allocation in Femtocell Networks	Abdulmajeed M. Alenezi and Khairi A. Hamdi
58	149	1	Threat Identification in Humanitarian Demining using Machine Learning and Spectroscopic Metal Detection	Wouter van Verre, Toykan Özdeger, Ananya Gupta, Frank JW Podd and Anthony J Peyton
1	3	1	Orchids Classification Using Spatial Transformer Network with Adaptive Scaling	Watcharin Sarachai, Jakramate Bootkrajang, Jeerayut Chaijaruwanichr and Samerkae Somhom
8	69	1	Fuzzy Clustering Approach to Data Selection for Computer Usage in Headache Disorders	Svetlana Simić, Ljiljana Radmilo, Dragan Simić, Svetislav D. Simić and Antonio J. Tallón-Ballesteros
Friday Track 1				
F.1.1		Graph Methods		
			<i>Chair: Anthony Bagnall</i>	
31	81	1	Representation Learning of Knowledge Graphs with Multi-scale Capsule Network	Jingwei Cheng, Zhi Yang, Jinming Dang, Chunguang Pan and Fu Zhang
32	84	1	CNNPSP: Pseudouridine Sites Prediction Based on Deep Learning	Yongxian Fan, Yongzhen Li, Huihua Yang and Xiaoyong Pan
8	19	1	Modeling Data Driven Interactions on Property Graph	Worapol Alex Pongpech
F.1.2		Adversarial Modelling		
			<i>Chair: Benjamin Paaßen</i>	
39	92	1	Adversarial Edit Attacks for Tree Data	Benjamin Paaßen
40	94	1	Non-stationary Noise Cancellation Using Deep Autoencoder based on Adversarial Learning	Kyung-Hyun Lim, Jin-Young Kim and Sung-Bae Cho
F.1.3		Time Series		
			<i>Chair: Milan Tuba</i>	
47	105	1	Artificial Flora Optimization Algorithm for Task Scheduling in Cloud Computing Environment	Nebojsa Bacanin, Eva Tuba, Timea Bezdán, Ivana Strumberger and Milan Tuba
48	109	1	A Significantly Faster Elastic-Ensemble for Time-Series Classification	George Oastler and Jason Lines
2	7	1	Scalable Dictionary Classifiers for Time Series Classification	Matthew Middlehurst, William Vickers and Anthony Bagnall
16	43	1	A hybrid approach to time series classification with shapelets	David Guijo-Rubio, Pedro A. Gutiérrez, Romain Tavenard and Anthony Bagnall
F.1.4		Learning Systems		

			<i>Chair: Martin Shepperd</i>	
12	26	1	The Prevalence of Errors in Machine Learning Experiments	Martin Shepperd, Yuchen Guo, Ning Li, Mahir Arzoky, Andrea Capiluppi, Steve Counsell, Giuseppe Destefanis, Stephen Swift, Allan Tucker and Leila Yousefi
13	27	1	A HYBRID MODEL FOR FRAUD DETECTION ON PURCHASE ORDERS	William Ferreira Moreno Oliverio, Allan Barcelos Silva, Sandro José Rigo and Rodolpho Lopes Bezerra da Costa
43	99	1	Active Dataset Generation for Meta-Learning System Quality Improvement	Alexey Zabashta and Andrey Filchenkov
52	126	1	An Efficient Scheme for Prototyping kNN in the Context of Real-Time Human Activity Recognition	Paulo J.S. Ferreira, Ricardo M. C. Magalhães, Kemilly Dearo Garcia, João M.P. Cardoso, and João Mendes-Moreira

F.1.5/6		Special Session on Machine Learning in Healthcare		
			<i>Chairs: Ivan Olier, Sandra Ortega-Martorell</i>	
10	44	5	Brain Tumor Classification Using Principal Component Analysis and Kernel Support Vector Machine	Richard Torres-Molina, Carlos Bustamante-Orellana, Andrés Riofrío-Valdivieso, Francisco Quinga-Socasi, Robinson Guachi and Lorena Guachi-Guachi
11	61	5	Modelling survival by machine learning methods in liver transplantation: application to the UNOS dataset	David Guijo-Rubio, Pedro J. Villalón-Vaquero, Pedro A. Gutiérrez, María Dolores Ayllón, Javier Briceño and César Hervás-Martínez
12	71	5	Design and Development of an Automatic Blood Detection System for Capsule Endoscopy Images	Pedro Pons, Reinier Noorda, Andrea Nevárez, Adrián Colomer, Vicente Pons Beltrán and Valery Naranjo
13	76	5	Comparative Analysis for Computer-Based Decision Support: Case Study of Knee Osteoarthritis	Philippa Grace McCabe, Ivan Olier, Sandra Ortega-Martorell, Ian Jarman, Vasiliios Baltzopoulos and Paulo Lisboa
14	142	5	A Clustering-Based Patient Grouper for Burn Care	Chimdimma Noelyn Onah, Richard Allmendinger, Julia Handl, Paraskevas Yiapanis and Ken W. Dunn
15	144	5	A comparative assessment of Feed-Forward and Convolutional Neural Networks for the classification of prostate lesions	Sabrina Marnell, Patrick Riley, Ivan Olier, Marc Rea and Sandra Ortega-Martorell
17	47	1	An ensemble algorithm based on Deep Learning for Tuberculosis classification	Alfonso Hernández, Ángel Panizo and David Camacho
5	12	1	Classifying Prostate Histological Images Using Deep Gaussian Processes on a New Optical Density Granulometry-Based Descriptor	Miguel López-Pérez, Adrián Colomer, María A. Sales, Rafael Molina and Valery Naranjo

Friday Track 2

F.2.1		Special Session on Fuzzy Systems and Intelligent Data Analysis		
			<i>Chairs: Susana Nascimento, Boris Mirkin</i>	
1	40	2	Computational Generalization in Taxonomies Applied to: (1) Analyze Tendencies of Research and (2) Extend User Audiences	Dmitry Frolov, Susana Nascimento, Trevor Fenner, Zina Taran and Boris Mirkin
2	77	2	Unsupervised Initialization of Archetypal Analysis and Proportional Membership Fuzzy Clustering	Susana Nascimento and Nuno Madaleno
56	143	1	Ordinal equivalence classes for parallel coordinates	Alexey Myachin and Boris Mirkin

F.2.2/3 Special Session on Knowledge Discovery from Data

			<i>Chair: Antonio J. Tallón-Ballesteros</i>	
22	42	8	Exploiting Online Newspaper Articles Metadata for Profiling City Areas	Livio Cascone, Pietro Ducange and Francesco Marcelloni
23	106	8	Modelling the Social Interactions in Ant Colony Optimization	Nishant Gurrupadi, Lydia Taw, Mariana Macedo, Marcos Oliveira, Diego Pinheiro, Carmelo Bastos-Filho and Ronaldo Menezes
24	108	8	An Innovative Deep-Learning Algorithm for Supporting the Approximate Classification of Workloads in Big Data Environments	Alfredo Cuzzocrea, Enzo Mumolo, Carson Leung and Giorgio Mario Grasso
25	112	8	Control-flow Business Process Summarization via Activity Contraction	Valeria Fionda and Gianluigi Greco
26	116	8	Classifying Flies Based on Reconstructed Audio Signals	Michael Flynn and Anthony Bagnall
27	127	8	Studying the Evolution of the 'Circular Economy' Concept using Topic Modelling	Sampriti Mahanty, Frank Boons, Julia Handl and Riza Batista-Navarro
28	128	8	Mining Frequent Distributions in Time Series	José Carlos Coutinho, João Mendes Moreira and Cláudio Rebelo de Sá
29	141	8	Time Series Display for Knowledge Discovery on Selective Laser Melting Machines	Ramón Moreno, Juan Carlos Pereira, Alex López, Asif Mohammed and Prasha Pahlevannejad
30	74	1	Knowledge Inference Through Analysis of Human Activities	Leandro O. Freitas, Pedro R. Henriques and Paulo Novais
29	72	1	Convolutional Neural Network for Core Sections Identification in Scientific Research Publications	Muhammad Bello Aliyu, Rahat Iqbal, Anne James and Dianabasi Nkantah
F.2.4			Data Representation and Dimensionality Reduction	
			<i>Chair: Davor Runje</i>	
22	57	1	A Self-Generating Prototype method based on Information Entropy used for Condensing Data in Classification Tasks	Alberto Manastarla and Leandro A. Silva
9	23	1	Adaptive Dimensionality Adjustment for Online "Principal Component Analysis"	Nico Migenda, Ralf Möller and Wolfram Schenck
35	87	1	Conditioned Generative Model via Latent Semantic Controlling for Learning Deep Representation of Data	Jin-Young Kim and Sung-Bae Cho
49	115	1	ALIME: Autoencoder Based Approach for Local Interpretability	Sharath M. Shankaranarayana and Davor Runje
F.2.5/6			Data Mining	
			<i>Chair: Alfredo Cuzzocrea</i>	
6	14	1	Adaptive Orthogonal Characteristics of Bio-inspired Neural Networks	Naohiro Ishii, Toshinori Deguchi, Masashi Kawaguchi, Hiroshi Sasaki and Tokuro Matsuo
10	24	1	Relevance Metric for Counterfactuals Selection in Decision Trees	Rubén R. Fernández, Isaac Martín de Diego, Victor Aceña, Javier M. Moguerza and Alberto Fernández-Isabel
11	25	1	Weighted Nearest Centroid Neighbourhood	Víctor Aceña, Javier M. Moguerza, Isaac Martín de Diego and Rubén R. Fernández
15	37	1	Mixing hetero- and homogeneous models in weighted ensembles	James Large and Anthony Bagnall
19	52	1	Retrieving and Processing Information from Clinical Algorithm via Formal Concept Analysis	Aleksandra Vatian, Anna Tatarinova, Svyatoslav Osipov, Nikolai Egorov, Vitalii Boitsov, Elena Ryngach, Tatiana Treshkur, Anatoly Shalyto and Natalia Gusarova

42	96	1	Superlinear Speedup of Parallel Population-based Metaheuristics: A Microservices and Container Virtualization Approach	Hatem Khalloof, Phil Ostheimer, Wilfried Jakob, Shadi Shahoud, Clemens Duepmeier and Veit Hagenmeyer
53	131	1	A Novel Recommendation System for Next Feature in Software	Victor R. Prata, Ronaldo S. Moreira, Luan S. Cordeiro, Átilla N. Maia, Alan R. Martins, Davi A. Leão, C. H. L. Cavalcante, Amauri H. Souza Júnior and Ajalmar R. Rocha Neto
45	102	1	User Localization Based on Call Detail Record	Buddhi Ayesha, Bhagya Jeewanthi, Charith Chitraranjan, Amal Shehan Perera and Amal S. Kumarage





