

Contents

Research and Development in Intelligent Systems XXXII

Best Technical Paper

Sparse Covariance Matrix Adaptation Techniques for Evolution Strategies	5
Silja Meyer-Nieberg and Erik Kropat	

Knowledge Discovery and Data Mining

A Replicator Dynamics Approach to Collective Feature Engineering in Random Forests	25
Khaled Fawgreh, Mohamed Medhat Gaber and Eyad Elyan	

A Directed Acyclic Graph Based Approach to Multi-Class Ensemble Classification	43
Esra’a Alshdaifat, Frans Coenen and Keith Dures	

CLUB-DRF: A Clustering Approach to Extreme Pruning of Random Forests	59
Khaled Fawagreh, Mohamed Medhat Gaber and Eyad Elyan	

Machine Learning and Knowledge Acquisition

Fast Handwritten Digit Recognition with Multilayer Ensemble Extreme Learning Machine	77
Hossein Ghodrati Noushahr, Samad Ahmadi and Arlene Casey	

Stylochronometry: Timeline Prediction in Stylometric Analysis	91
Carmen Klaussner and Carl Vogel	

Semantic Analysis for Document Similarity and Search Queries	107
Charlene Cassar and Samad Ahmadi	

Social Trust in a Familiar Community	119
Eseosa Oshodin, Francisco Chiclana and Samad Ahmadi	

AI in Action

Surface Reconstruction from Point Clouds Using a Novel Variational Model	135
Jinming Duan, Ben Haines, Wil O.C. Ward and Li Bai	

3D Spatial Reasoning Using the Clock Model	147
Joanna Isabelle Olszewska	

Scheduling with Structured Preferences	155
Roberto Micalizio and Gianluca Torta	

An Optimisation Algorithm Inspired by Dendritic Cells	169
N.M.Y. Lee and H.Y.K. Lau	

Short Papers

Graph-Based Multi-Document Summarization: An Initial Investigation	183
Asma Bader Al-Saleh and Mohamed El Bachir Menai	

Towards Expressive Rule Induction on IP Network Event Streams . . .	191
Chris Wrench, Frederic Stahl, Giuseppe Di Fatta, Vidhyalakshmi Karthikeyan and Detlef Nauck	

A Hybrid Ensemble for Classifying and Repurposing Financial Entities.	197
Peter John Hampton, Hui Wang and William Blackburn	

Data Mining and Knowledge Discovery Approach for Manufacturing in Process Data Optimization	203
Raed S. Batbooti and R.S. Ransing	

Applications and Innovations in Intelligent Systems XXIII

Best Application Paper

Development of Temporal Logic-Based Fuzzy Decision Support System for Diagnosis of Acute Rheumatic Fever/Rheumatic Heart Disease	213
Sanjib Raj Pandey, Jixin Ma and Chong Hong Lai	

Applications of Genetic Algorithms

Optimising Skill Matching in the Service Industry for Large Multi-skilled Workforces	231
R.T. Ainslie, S. Shakya, J. McCall and G. Owusu	
Hybrid Optimization Approach for Multi-Layer FTTH Network Design.	245
Kaltham Al Romaithi, Kin Fai Poon, Anis Ouali, Peng-Yong Kong and Sid Shakya	
A Genetic Algorithm Based Approach for Workforce Upskilling	261
A.J. Starkey, H. Hagrass, S. Shakya and G. Owusu	

Applications of Intelligent Agents and Evolutionary Techniques

Multi Agent Based Simulation Using Movement Patterns Mined from Video Data	275
Muhammad Tufail, Frans Coenen, Jane Hurst and Tintin Mu	
Assembly of Neural Networks Within a Federation of Rational Agents for the Diagnosis of Acute Coronary Syndromes	289
J.J. Sprockel and E. Gonzalez	
Cluster Analysis of Face Images and Literature Data by Evolutionary Distance Metric Learning	301
Wasin Kalintha, Taishi Megano, Satoshi Ono, Kenichi Fukui and Masayuki Numao	

AI Applications

A Novel K-Means Voice Activity Detection Algorithm Using Linear Cross Correlation on the Standard Deviation of Linear Predictive Coding	319
M.K. Mustafa, Tony Allen and Kofi Appiah	
Opinionated Explanations for Recommendation Systems	331
Aonghus Lawlor, Khalil Muhammad, Rachael Rafter and Barry Smyth	
The Influence of Virtual Reality on the Perception of Artificial Intelligence Characters in Games	345
Christopher J. Headleand, Gareth Henshall, Llyr Ap Cenydd and William J. Teahan	

Short Papers

Eugene: A Generic Interactive Genetic Algorithm Controller.	361
C. James-Reynolds and E. Currie	
Automatically Geotagging Articles in the Welsh Newspapers Online Collection.	367
Sean Sapstead, Illtud Daniel and Amanda Clare	
Contextual Sequential Pattern Mining in Games: Rock, Paper, Scissors, Lizard, Spock	375
Julien Dumartinet, Gaël Foppolo, Loïc Forthoffer, Pierre Marais, Madalina Croitoru and Julien Rabatel	
On the Way Towards Automated Planning and Budgeting: Combining Fuzzy Planning with CBR Learning Systems.	381
Miriam Gebauer, Peter Rausch and Michael Stumpf	
A Comparative Analysis of Ranking Methods in a Hybrid Filter-Wrapper Model for Feature Selection in DNA Microarrays	387
Conor Fahy, Samad Ahmadi and Arlene Casey	
A New Content-Based Recommendation Algorithm for Job Recruiting	393
N. Almalis, G. Tsihrintzis and N. Karagiannis	
Mining Fuzzy Time-Interval Patterns in Clinical Databases.	399
A. Mills-Mullett and J. Lu	
A Sense-Think-Act Architecture for Low-Cost Mobile Robotics.	405
Liam Chapman, Cameron Gray and Chris Headleand	

Research and Development in Intelligent Systems XXXII
Incorporating Applications and Innovations in Intelligent
Systems XXIII

Bramer, M.; Petridis, M. (Eds.)

2015, XIV, 410 p. 115 illus. in color., Softcover

ISBN: 978-3-319-25030-4