

# Contents

## Actions and Behaviours

Action Recognition by Pairwise Proximity Function Support Vector Machines with Dynamic Time Warping Kernels . . . . .	3
<i>Mohammad Ali Bagheri, Qigang Gao, and Sergio Escalera</i>	
An Agent-Based Architecture for Sensor Data Collection and Reasoning in Smart Home Environments for Independent Living . . . . .	15
<i>Thomas Reichherzer, Steven Satterfield, Joseph Belitsos, Janusz Chudzynski, and Lamar Watson</i>	
Biometric Authentication by Keystroke Dynamics for Remote Evaluation with One-Class Classification . . . . .	21
<i>Chuan Chang, Thierry Eude, and Luis Eduardo Obando Carbajal</i>	
Fishing Activity Detection from AIS Data Using Autoencoders . . . . .	33
<i>Xiang Jiang, Daniel L. Silver, Baifan Hu, Erico N. de Souza, and Stan Matwin</i>	
Simulating the Bubble Net Hunting Behaviour of Humpback Whales: The BNH-Whale Algorithm . . . . .	40
<i>Stacey Hala, Howard J. Hamilton, and Paolo Domenici</i>	
Gaussian Neuron in Deep Belief Network for Sentiment Prediction . . . . .	46
<i>Yong Jin, Donglei Du, and Harry Zhang</i>	
Grounding Social Interaction with Affective Intelligence . . . . .	52
<i>Joshua D.A. Jung, Jesse Hoey, Jonathan H. Morgan, Tobias Schröder, and Ingo Wolf</i>	
The Mismeasure of Machines . . . . .	58
<i>Eric Neufeld and Sonje Finnestad</i>	
Uncovering Hidden Sentiment in Meetings . . . . .	64
<i>Gabriel Murray</i>	
Fuzzy Computational Model for Emotions Originated in Workplace Events . . .	73
<i>Ahmad Soleimani and Ziad Kobti</i>	

**Audio and Visual Recognition**

Tolerance-Based Approach to Audio Signal Classification . . . . .	83
<i>Sheela Ramanna and Ashmeet Singh</i>	
A Novel Dataset for Real-Life Evaluation of Facial Expression Recognition Methodologies . . . . .	89
<i>Muhammad Hameed Siddiqi, Maqbool Ali, Muhammad Idris, Oresti Banos, Sungyoung Lee, and Hyunseung Choo</i>	
Visual Perception Similarities to Improve the Quality of User Cold Start Recommendations . . . . .	96
<i>Cricia Z. Felício, Claudianne M.M. de Almeida, Guilherme Alves, Fabíola S.F. Pereira, Klérisson V.R. Paixão, and Sandra de Amo</i>	
Object-Based Representation for Scene Classification . . . . .	102
<i>Xuhui Luo and Jinhua Xu</i>	
Salient Object Detection in Noisy Images. . . . .	109
<i>Nitin Kumar, Maheep Singh, M.C. Govil, E.S. Pilli, and Ajay Jaiswal</i>	
An Approach to Improving Single Sample Face Recognition Using High Confident Tracking Trajectories . . . . .	115
<i>M. Ali Akber Dewan, Dan Qiao, Fuhua Lin, Dunwei Wen, and Kinshuk</i>	
Neural Network-POMDP-Based Traffic Sign Classification Under Weather Conditions . . . . .	122
<i>Shervin Shahryari and Cameron Hamilton</i>	

**Natural Language Processing**

Poetry Chronological Classification: Hafez . . . . .	131
<i>Arya Rahgozar and Diana Inkpen</i>	
f: Phrase Relatedness Function Using Overlapping Bi-gram Context . . . . .	137
<i>Md. Rashadul Hasan Rakib, Aminul Islam, and Evangelos Milios</i>	
Harnessing Open Information Extraction for Entity Classification in a French Corpus . . . . .	150
<i>Fabrizio Gotti and Philippe Langlais</i>	
A Novel Genetic Algorithm for the Word Sense Disambiguation Problem . . .	162
<i>Wojdan Alsaedan and Mohamed El Bachir Menai</i>	
Mining Biomedical Literature: An Open Source and Modular Approach . . . .	168
<i>Hayda Almeida, Ludovic Jean-Louis, and Marie-Jean Meurs</i>	

Word Normalization Using Phonetic Signatures . . . . . 180  
*Vincent Jahjah, Richard Khoury, and Luc Lamontagne*

Forecasting Canadian Elections Using Twitter. . . . . 186  
*Kenton White*

Time-Sensitive Topic-Based Communities on Twitter . . . . . 192  
*Hossein Fani, Fattane Zarrinkalam, Ebrahim Bagheri,  
and Weichang Du*

**Reasoning and Learning**

On Tree Structures Used by Simple Propagation . . . . . 207  
*Anders L. Madsen, Cory J. Butz, Jhonatan S. Oliveira,  
and André E. dos Santos*

A Simple Method for Testing Independencies in Bayesian Networks. . . . . 213  
*Cory J. Butz, André E. dos Santos, Jhonatan S. Oliveira,  
and Christophe Gonzales*

Flexible Approximators for Approximating Fixpoint Theory. . . . . 224  
*Fangfang Liu, Yi Bi, Md. Solimul Chowdhury, Jia-Huai You,  
and Zhiyong Feng*

Learning Statistically Significant Contrast Sets . . . . . 237  
*Mohomed Shazan Mohamed Jabbar and Osmar R. Zaïane*

A Connection Calculus for the Description Logic *ALC* . . . . . 243  
*Fred Freitas and Jens Otten*

Representation, Reasoning, and Learning for a Relational Influence  
Diagram Applied to a Real-Time Geological Domain . . . . . 257  
*Matthew Dirks, Andrew Csinger, Andrew Bamber, and David Poole*

Nearly Counterfactual Revision. . . . . 263  
*Aaron Hunter*

Improving Conversation Engagement Through Data-Driven Agent  
Behavior Modification . . . . . 270  
*Michael Procter, Fuhua Lin, and Robert Heller*

Active Recruitment Mechanisms for Heterogeneous Robot Teams  
in Dangerous Environments . . . . . 276  
*Geoff Nagy and John Anderson*

**Streams and Distributed Computing**

Compression of General Bayesian Net CPTs . . . . . 285  
*Yang Xiang and Qian Jiang*

Sampling Graphical Networks via Conditional Independence Coupling  
of Markov Chains . . . . . 298  
*Guichong Li*

Threaded Ensembles of Supervised and Unsupervised Neural Networks  
for Stream Learning . . . . . 304  
*Yue Dong and Nathalie Japkowicz*

A Density-Grid Based Clustering Algorithm on Data Stream Using  
Resilient Distributed Datasets . . . . . 316  
*Yuan Zhang and Jiongmin Zhang*

Distributed Gaussian Mixture Model Summarization Using the MapReduce  
Framework . . . . . 323  
*Arina Esmaeilpour, Elnaz Bigdeli, Fatemeh Cheraghchi, Bijan Raahemi,  
and Behrouz H. Far*

Erratum to: Advances in Artificial Intelligence . . . . . E1  
*Richard Khoury and Christopher Drummond*

**Author Index** . . . . . 337



<http://www.springer.com/978-3-319-34110-1>

Advances in Artificial Intelligence  
29th Canadian Conference on Artificial Intelligence,  
Canadian AI 2016, Victoria, BC, Canada, May 31 - June  
3, 2016. Proceedings  
Khoury, R.; Drummond, C. (Eds.)  
2016, XXIV, 338 p. 85 illus., Softcover  
ISBN: 978-3-319-34110-1