

2015 Brazilian Conference on Intelligent Systems (BRACIS 2015)

**Natal, Brazil
4 – 7 November 2015**



**IEEE Catalog Number: CFP15BAA-POD
ISBN: 978-1-5090-0017-3**

**Copyright © 2015 by the Institute of Electrical and Electronic Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP15BAA-POD
ISBN (Print-On-Demand):	978-1-5090-0017-3
ISBN (Online):	978-1-5090-0016-6

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2015 Brazilian Conference on Intelligent Systems

BRACIS 2015

Table of Contents

Message from General Chair.....	x
Message from Program Chairs.....	xi
Conference Organization.....	xii
Program Committee.....	xiii
Reviewers.....	xvi
Conference History.....	xix
Acknowledgements.....	xx

Session 1 - Hyper-Heuristics and Optimization

Evaluating a Multi-objective Hyper-Heuristic for the Integration and Test Order Problem	1
<i>Giovani Guizzo, Silvia R. Vergilio, and Aurora T.R. Pozo</i>	
A Hyper-Heuristic for the Environmental/Economic Dispatch Optimization Problem.....	7
<i>Richard A. Gonçalves, Carolina P. Almeida, Sandra M. Venske, Josiel N. Kuk, Lucas M. Pavelski, and Myriam R. Delgado</i>	
A Multi-armed Bandit Hyper-Heuristic	13
<i>Alexandre Silvestre Ferreira, Richard Aderbal Gonçalves, and Aurora Trinidad Ramirez Pozo</i>	
Automated Iterative Partitioning for Cooperatively Coevolving Particle Swarms in Large Scale Optimization	19
<i>Peter Frank Perroni, Daniel Weingaertner, and Myriam Regattieri Delgado</i>	
Evaluating Methods for Constant Optimization of Symbolic Regression Benchmark Problems	25
<i>Vinicius Veloso de Melo, Benjamin Fowler, and Wolfgang Banzhaf</i>	
Stealthy Path Planning Using Navigation Meshes	31
<i>Matheus R.F. Mendonça, Heder S. Bernardino, and Raul F. Neto</i>	

Session 2 - Data Mining and Machine Learning

Dyna-MLAC: Trading Computational and Sample Complexities in Actor-Critic Reinforcement Learning	37
<i>Bruno Costa, Wouter Caarls, and Daniel Sadoc Menasché</i>	
A Cluster Based Hybrid Feature Selection Approach	43
<i>Pablo A. Jaskowiak and Ricardo J.G.B. Campello</i>	
Semi-supervised Multi-label k-Nearest Neighbors Classification Algorithms	49
<i>Danilo C.G. de Lucena and Ricardo B.C. Prudencio</i>	
IGMM-CD: A Gaussian Mixture Classification Algorithm for Data Streams with Concept Drifts	55
<i>Luan Soares Oliveira and Gustavo E.A.P.A. Batista</i>	
Selectively Inhibiting Learning Bias for Active Sampling	62
<i>Davi P. Dos Santos and André C.P.L.F. de Carvalho</i>	
Contextual Bandits for Multi-objective Recommender Systems	68
<i>Anisio Lacerda</i>	

Session 3 - Best Papers Indications

Scalable Fast Evolutionary k-Means Clustering	74
<i>Gilberto Viana de Oliveira and Murilo Coelho Nald</i>	
Predicting High-Performance Concrete Compressive Strength Using Features Constructed by Kaizen Programming	80
<i>Vinícius Veloso de Melo and Wolfgang Banzhaf</i>	
Multiobjective Binary ACO for Unconstrained Binary Quadratic Programming	86
<i>Murilo Zangari de Souza and Aurora Trinidad Ramirez Pozo</i>	
An Adaptive Multi-level Framework for Forest Species Recognition	92
<i>Paulo R. Cavalin, Marcelo N. Kapp, and Luiz E.S. Oliveira</i>	

Session 4 - Multi-agent Systems

Towards Practical Argumentation in Multi-agent Systems	98
<i>Alison R. Panisson, Felipe Meneguzzi, Renata Vieira, and Rafael H. Bordin</i>	
A Multi-agent Metaheuristic Optimization Framework with Cooperation	104
<i>Maria Amélia Lopes Silva, Sérgio Ricardo de Souza, Marcone Jamilson Freitas Souza, and Sabrina Moreira de Oliveira</i>	
Merging Argumentation Systems	110
<i>Lucas Leite, Thiago Alves, and João Alcântara</i>	
Evaluating Perception Filters in BDI Jason Agents	116
<i>Márcio Fernando Stabile and Jaime Simão Sichman</i>	

Building Up Conceptual Spaces: An ESOM Supported Strategy	122
<i>Suelen Mapa de Paula, Micael Cabrera Carvalho, and Ricardo Ribeiro Gudwin</i>	

An Occlusion Calculus Based on an Interval Algebra	128
<i>Paulo E. Santos, Gérard Ligozat, and Marjan Safi-Samghabad</i>	

Session 5 - Learning from Text

Ranking Keyphrases from Semantic and Syntactic Features of Textual Terms	134
<i>Raquel Silveira, Vasco Furtado, and Vladia Pinheiro</i>	

Adaptation of Discourse Parsing Models for the Portuguese Language	140
<i>Erick G. Maziero, Graeme Hirst, and Thiago A.S. Pardo</i>	

The Impact of Contrastive Corpora for Term Relevance Measures	146
<i>Lucelene Lopes, Paulo Fernandes, Roger Granada, and Renata Vieira</i>	

Exploring Resources for Sentiment Analysis in Portuguese Language	152
<i>Larissa A. de Freitas and Renata Vieira</i>	

Li-Fraumeni Ontology: A Case Study of an Ontology for Knowledge Discovery in a Cancer Domain	157
<i>Ricardo M.S. Budaruiche, Renata Wassermann, Diogo F.C. Patrao, and Maria I.W. Achatz</i>	

Text Categorization Based on Dissimilarity Representation and Prototype Selection	163
<i>Roberto H.W. Pinheiro, George D.C. Cavalcanti, and Tsang Ing Ren</i>	

Session 6 - Neural Networks

Fitting Parameters on Quantum Weightless Neuron Dynamics	169
<i>Fernando M. de Paula Neto, Teresa B. Ludermir, Wilson R. de Oliveira, and Adenilton J. da Silva</i>	

Speech Recognition in Noisy Environments with Convolutional Neural Networks	175
<i>Rafael M. Santos, Leonardo N. Matos, Hendrik T. Macedo, and Jugurta Montalvao</i>	

A Set-Medoids Vector Batch SOM Algorithm Based on Multiple Dissimilarity Matrices	180
<i>Francisco de A.T. de Carvalho and Eduardo C. Simoes</i>	

Session 7 - Computational Intelligence (Poster Presentation)

A Novel Ensemble Approach Based on Balanced Perceptrons Applied to Microarray Datasets	186
<i>Karen Braga Enes, Saulo Moraes Villela, and Raul Fonseca Neto</i>	

A Parallel Approach of a Hybrid Particle Swarm Optimization Algorithm to Solve the Vehicle Routing Problem with Time Windows	192
<i>Thiago Muniz Stehling, Sérgio Ricardo de Souza, and Moacir F. de França Filho</i>	
A Portable OpenCL-Based Approach for SVMs in GPU	198
<i>Henry E.L. Cagnin, Ana T. Winck, and Rodrigo C. Barros</i>	
Adaptive Method for Segmentation of Vehicles through Local Threshold in the Gaussian Mixture Model	204
<i>Kalyf Abdalla Buzar Lima, Kelson Rômulo Teixeira Aires, and Francisco Wender Pereira Dos Reis</i>	
Adaptive Navigation for Mobile Robots with Object Recognition and Ontologies	210
<i>Jurasildo O. Reinaldo, Rosiery S. Maia, and Anderson Abner Souza</i>	
Adding Value to Daily-Deals Recommendation: Multi-armed Bandits to Match Customers and Deals	216
<i>Anisio Lacerda, Adriano Veloso, and Nivio Ziviani</i>	
Capturing Relationships in Multi-objective Optimization	222
<i>Gian Fritsche, Andrei Strickler, Aurora Pozo, and Roberto Santana</i>	
Comparative Study of Genetic Algorithm and Ant Colony Optimization Algorithm Performances for the Task of Guitar Tablature Transcription	228
<i>João Víctor Ramos, André Stylianos Ramos, Carlos N. Silla, and Danilo Sipoli Sanches</i>	
Grouping Similar Trajectories for Carpooling Purposes	234
<i>Michael O. Cruz, Hendrik Macedo, and Adolfo Guimarães</i>	
Looking at the Bottom and the Top: A Hybrid Logical Relational Learning System Based on Answer Sets	240
<i>Victor Guimarães and Aline Paes</i>	
Probabilistic Fuzzy Naive Bayes	246
<i>Gabriel Moura and Mauro Roisenberg</i>	
Reference-Point Based Multi-swarm Algorithm for Many-Objective Problems	252
<i>Andre Britto and Aurora Pozo</i>	
Solving NP-complete Problems Using Quantum Weightless Neuron Nodes	258
<i>Fernando M. de Paula Neto, Teresa B. Ludermir, Wilson R. de Oliveira, and Adenilton J. da Silva</i>	
Solving Sokoban Optimally with Domain-Dependent Move Pruning	264
<i>Renato R. Leme, André G. Pereira, Marcus Ritt, and Luciana S. Buriol</i>	
Transducer State Prediction System for Smart Environment Intelligent Control	270
<i>Marcelo Bassani de Freitas, George D.C. Cavalcanti, and Robert Sabourin</i>	
Using Markov Models to Learn the Sentiment of Soccer Fans from Bets and the Result of Matches	276
<i>Rafael Bomfim and Vasco Furtado</i>	

Session 8 - Learning and Recommender Systems

Context-Aware Techniques for Cross-Domain Recommender Systems	282
<i>Douglas Vêras, Ricardo Prudêncio, Carlos Ferraz, Alysso Bispo, and Thiago Prota</i>	
Desire: A Dynamic Approach for Exploratory Search Results Recommendation	288
<i>Lucas Pupulin Nanni and Valéria Delisandra Feltrim</i>	
KSIG: Improving the Convergence Rate in Adaptive Filtering Using Kernel Hilbert Space	294
<i>É.P. da Silva, C.A. Estombelo-Montesco, and Ewaldo Santana</i>	
Adapting Noise Filters for Ranking	299
<i>Ana Carolina Lorena, Luís Paulo Faina Garcia, and André C.P.L.F. de Carvalho</i>	
MLM-rank: A Ranking Algorithm Based on the Minimal Learning Machine	305
<i>Alisson S.C. Alencar, Wesley L. Caldas, João P.P. Gomes, Amauri H. de Souza, Paulo A.C. Aguilár, Cristiano Rodrigues, Wellington Franco, Miguel F. de Castro, and Rossana M.C. Andrade</i>	

Session 9 – Applications

Ensemble of Adaptive Algorithms for Keystroke Dynamics	310
<i>Paulo Henrique Pisani, Ana Carolina Lorena, and André C.P.L.F. de Carvalho</i>	
SURF Descriptor and Pattern Recognition Techniques in Automatic Identification of Pathological Retinas	316
<i>Rodrigo Veras, Romuere Silva, Flávio Araújo, and Fátima Medeiros</i>	
Deep Learning for Wind Speed Forecasting in Northeastern Region of Brazil	322
<i>Anderson Tenório Sergio and Teresa B. Ludermir</i>	
Predicting Overtemperature Events in Graphics Cards Using Regression Models	328
<i>Francisco Caio M. Rodrigues, Lucas P. Queiroz, João Paulo P. Gomes, and Javam C. Machado</i>	
A Computer Vision System for Guidance of VTOL UAVs Autonomous Landing	333
<i>Felipe Leonardo Lôbo Medeiros, Vítor Conrado Faria Gomes, Márcia Rodrigues Campos de Aquino, Diego Geraldo, Marcos Eduardo Lopes Honorato, and Luiz Henrique Moreira Dias</i>	
Author Index	339