

**PROCEEDINGS OF
THE 2011 INTERNATIONAL CONFERENCE ON
ARTIFICIAL INTELLIGENCE**

ICAI 2011

Volume II

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Foreword

It gives us great pleasure to introduce this collection of papers to be presented at the 2011 International Conference on Artificial Intelligence (ICAI'11), July 18 through 21, 2011, at Monte Carlo Resort, Las Vegas, USA.

The Academic Co-Sponsors of this year's conference include:

The Berkeley Initiative in Soft Computing (BISC), University of California, Berkeley, USA; Biomedical Cybernetics Laboratory, HST of Harvard University and Massachusetts Institute of Technology (MIT), USA; Intelligent Data Exploration and Analysis Laboratory, University of Texas at Austin, Austin, Texas, USA; Collaboratory for Advanced Computing and Simulations (CACs), University of Southern California, USA; Minnesota Supercomputing Institute, University of Minnesota, USA; Knowledge Management & Intelligent System Center (KMIS) of University of Siegen, Germany; UMIT, Institute of Bioinformatics and Translational Research, Austria; BioMedical Informatics & Bio-Imaging Laboratory, Georgia Institute of Technology and Emory University, Atlanta, Georgia, USA; Hawkeye Radiology Informatics, Department of Radiology, College of Medicine, University of Iowa, Iowa, USA; NDSU-CIIT Green Computing and Communications Laboratory, USA; Supercomputer Software Department (SSD), Institute of Computational Mathematics & Mathematical Geophysics, Russian Academy of Sciences, Russia; SECLAB (inter-university research groups at University of Naples Federico II, the University of Naples Parthenope, and Second University of Naples, Italy); Medical Image HPC & Informatics Lab (MiHi Lab), University of Iowa, Iowa, USA; Intelligent Cyberspace Engineering Lab., ICEL, Texas A&M University (Com./Texas), USA; and Model-Based Engineering Laboratory, University of North Dakota, North Dakota, USA.

Corporate Co-Sponsors, Co-Sponsors At-Large and Organizers include:

A number of university faculty members and their staff (names appear below and also on the cover of the proceedings); Microsoft Research; Altera Corporation; Pico Computing; World Academy of Science (www.world-academy-of-science.org/); Computer Science Research, Education, and Applications Press; High Performance Computing for Nanotechnology (HPCNano); International Society of Intelligent Biological Medicine; World Academy of Biomedical Sciences and Technologies; The International Council on Medical and Care Compunetics; The UK Department for Business, Enterprise & Regulatory Reform, UK; Scientific Technologies Corporation; and HoIP - Health without Boundaries. In addition, several publishers of computer science and computer engineering books and journals, chapters and/or task forces of computer science associations/organizations from 8 countries, and developers of high-performance machines and systems provided significant help in organizing the conference as well as providing some resources.

An important mission of WORLDCOMP (a federated congress to which this conference is affiliated with) includes "Providing a unique platform for a diverse community of constituents composed of scholars, researchers, developers, educators, and practitioners. The Congress makes concerted effort to reach out to participants affiliated with diverse entities (such as: universities, institutions, corporations, government agencies, and research centers/labs) from all over the world. The congress also attempts to connect participants from institutions that have **teaching** as their main mission with those who are affiliated with institutions that have **research** as their main mission. The congress uses a quota system to achieve its institution and geography diversity objectives."

The program committee would like to thank all those who submitted papers for consideration. About 58% of the submissions were from outside the United States. Each paper was peer-reviewed by two experts in the field for originality, significance, clarity, impact, and soundness. In cases of contradictory recommendations, a member of the conference program committee was charged to make the final decision; often, this involved seeking help from additional referees by using a double-blinded review process. In addition, papers whose authors included a member of the conference program committee were evaluated using the double-blinded review process. The only exception to the above evaluation process was for papers that were submitted directly to chairs/organizers of approved sessions/workshops; in these cases, the chairs/organizers were responsible for the evaluation of such submissions. The overall paper acceptance rate for regular papers was 23%; 18% of the remaining papers were accepted as poster papers.

We are very grateful to the many colleagues who helped in organizing the conference. In particular, we would like to thank the members of the ICAI'11 Program Committee who we hope will offer their help again in organizing the next year's conference (ICAI'12). The ICAI'11 Program Committee members were:

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- *Dr. Songfeng (Andy) Zheng, Missouri State University, Springfield, Missouri, USA*

We express our gratitude to keynote and invited speakers of WORLDCOMP and individual conference/tracks and tutorial speakers - the list of speakers appears on the conference web site.

We would also like to thank the followings: UCMSS (Universal Conference Management Systems & Support, California, USA) for managing all aspects of the conference; Dr. Tim Field of APC for managing the printing of the proceedings; and the staff of Monte Carlo Resort in Las Vegas for the professional service they provided. Last but not least, we would like to thank the Co-editors and Associate Editors of ICAI'11: Drs. David de la Fuente, Elena B. Kozerenko, Jose A. Olivas, Elpiniki I. Papageorgiou, Carsten Rocker, Jose L. Salmeron, and Ashu M. G. Solo.

We present the proceedings of ICAI'11.

Hamid R. Arabnia, Ph.D.
 Professor, Computer Science, University of Georgia, USA
General Chair & Coordinator, ICAI'11

Contents

SESSION: INTELLIGENT AGENTS + AUTONOMOUS AGENTS

Frequency-Based Patrolling with Heterogeneous Agents and Limited Communication	3
<i>Tao Mao, Laura Ray</i>	
Extending the General Game Playing Framework to Other Languages	10
<i>Xinxin Sheng, David Thuente</i>	
A Web-Based Controlled System for Autonomous Agent	18
<i>Ali Abu El Humos, Tisha Brown, Marvin Watts, Kimani Price</i>	
Economic Effects of Multiple Intelligent Agents in Online Auctions	22
<i>Jacob Sow, Patricia Anthony, Chong Mun Ho</i>	
A Case Study of Task-Based Reorganization in a Pursuit Game Simulation	29
<i>Maryamossadat Mahani, Arvin Agah</i>	
Query Based Learning in Multi-Agent Systems	33
<i>Safiye Sencer</i>	
Milestone States Formulation Methods	40
<i>Hyungoo Han</i>	

SESSION: MEDICAL + HEALTH INFORMATICS AND RELATED ISSUES

Prediction of Chronic Fatigue Syndrome Using Decision Tree-Based Ensemble Methods	49
<i>Christine M. Bronikowski, Angela Weng, Jacob D. Furst, Daniela S. Raicu</i>	
Social Inclusion in Ambient Assisted Living Environments: Home Automation and Convenience Services for Elderly User	55
<i>Carsten Röcker, Matrina Ziefle, Andreas Holzinger</i>	
A Hybrid Adaptive Multi Sensor Data Fusion for Estimation of Skeletal Muscle Force for Prosthetic Hand Control	60
<i>Parmod Kumar, Chandrasekhar Potluri, Anish Sebastian, Yimesker Yihun, Adnan Ilyas, Madhavi Anugolu, Rohit Sharma, Steve Chiu, Jim Creelman, Alex Urfer, D. Subbaram Naidu, Marco P. Schoen</i>	

SESSION: NOVEL APPLICATIONS AND ALGORITHMS

Payoff Allocation for PSS Control Service in the Restructured Power System	69
<i>Aref Jalili, H. Shayeghi, Heidarali Shayanfar</i>	

PSO-TVAC Algorithm for Multi Objective PSS Design in Multi-Machine Power System	76
<i>Ali Ghasemi, Oveis Abedinia, Heidarali Shayanfar, Mohammad Salay Naderi</i>	
Design of Robust PSS to Improve Stability of Composed LFC and AVR Using ABC in Deregulated Environment	82
<i>Oveis Abedinia, Heidarali Shayanfar, Bart Wyns, Ali Ghasemi</i>	
An Automatic Image Registration Algorithm for Tracking Moving Objects in Low-Resolution Video	89
<i>David Johnson, Arvin Agah</i>	
Recognition of Marker-less Human Actions in Videos Using Hidden Markov Models	95
<i>David Johnson, Arvin Agah</i>	
Situations, Deduction, Plausibility	101
<i>Peeter Lorents, Erika Matsak</i>	
Social Features Discovery from Cellphone Contextual Data by Semantic Location Classification	108
<i>Werner Creixell, Tomas Arredondo, Sebastian Contreras, Patricio Olivares, Wladimir Ormazabal</i>	
Cycles, Diversity and Competition in Rock-Paper-Scissors-Lizard-Spock Spatial Game Agent Simulations	115
<i>Ken Hawick</i>	
Artificial Bee Colony Based Power System Stabilizer Design for a Turbo-Generator in a Single-Machine Power System	122
<i>H. Shayeghi, Heidarali Shayanfar, Ali Ghasemi</i>	
Yet Another Breakout Inspired Infeasible Subset Detection in Constraint Satisfaction Problem	129
<i>Jun Hu, Philippe Galinier, Alexandre Caminada</i>	
Walking Pattern Discrimination based on Wavelet and Fractal Analysis	136
<i>Yang Xue, Lianwen Jin</i>	
Bispectrum Classification of Multi-User Chirp Modulation Signals Using Artificial Intelligent Techniques	141
<i>Said El-Khamy, Hend Elsayed, Mohammed Rizk</i>	
Using Visual Fingerprints of Places for Robotic Localization	148
<i>Bradley Wimpey, Walter Potter</i>	
Applying Dynamic Conditions to an Auction Behavior-Based Robotic Architecture	155
<i>Bradford Towle, Monica Nicolescu</i>	

A COG Analysis Model of System-of-Systems (SoS) Based on Multi-Entity Bayesian Networks (MEBN)	162
<i>Yun Zhou, Cheng Zhu, Ting Lei, Weiming Zhang, Zhong Liu</i>	
Multiple Offer Strategy for Automated Negotiation Agents	168
<i>Kivanc Ozonat</i>	
Artificial Intelligence Techniques for Understanding Gothic Cathedrals	175
<i>Stefaan Van Liefferinge, Charles Hollingsworth, Rebecca Smith, Michael Covington, Walter Potter</i>	
An Automated Derivation of Church's P2 Sentential Calculus from Lukasiewicz's CN	179
<i>Jack Horner</i>	
Optimized In-Memory Joins for a Distributed Deductive Database Running in a Multi-Core Environment	186
<i>Martin Maskarinec, Kathleen Neumann</i>	
An Automated Derivation of Frege's Sentential Calculus from Lukasiewicz's CN	190
<i>Jack Horner</i>	
Honey Bee Mating Optimization Based LFC Design in a Deregulated Power System	197
<i>H. Shayeghi, Heidarali Shayanfar, Ali Ghasemi</i>	
Development of Discriminant Analysis and Majority-Voting Based Credit Risk Assessment Classifier	204
<i>Paulius Danenas, Gintautas Garsva, Rimvydas Simutis</i>	
PSS Design for a Single-Machine Power System Using Honey Bee Mating Optimization	210
<i>H. Shayeghi, Heidarali Shayanfar, Ali Akbarimajd, Ali Ghasemi</i>	
An Automated Derivation of Lukasiewicz's CN from Frege's Sentential Calculus	217
<i>Jack Horner</i>	
Transformation To Near Gaussian Distribution In Feature Space Based On Kernel PCA	222
<i>Ying-Can Wei</i>	
An Automated Derivation of Lukasiewicz's CN Sentential Calculus from Church's P2	229
<i>Jack Horner</i>	
Improving Network Intrusion Detection with Growing Hierarchical Self-Organizing Maps	234
<i>Andres Ortiz, Julio Ortega, Alberto Prieto, Antonio F. Diaz</i>	

Evaluation of Illuminance Provided by the Intelligent Lighting System in Actual Office	239
<i>Mitsunori Miki, Yoshihiro Kasahara, Tomoyuki Hiroyasu, Masato Yoshimi, Hirotaka Ito</i>	
Some Model Theoretical Results over Horn Formula	245
<i>Maonian Wu, Mingyi Zhang, Ying Zhang</i>	
An Automated Derivation of Lukasiewicz's CN from the Hilbert/Ackerman Grundzuege Sentential Calculus	252
<i>Jack Horner</i>	
MAKER: A New Algorithm in Finding Frequent Itemsets	256
<i>Masoud Yaghini, Kaveh Rasouli Chizari, Mahsa Mortazavi, Erfan Khaji, Mahyar Hoseynzadeh</i>	
Design of a Predictor for MD5 Based Cryptographic Systems: A TVAC-PSO Based Approach	260
<i>Sonai Ray, Monjur Alam, Samrat Ray, Ayatullah Faruk Mollah</i>	
An Automated Derivation of the Hilbert/Ackerman Grundzuege Sentential Calculus from Lukasiewicz's CN	265
<i>Jack Horner</i>	
The Design of Battle Field Robot	272
<i>D. Bubesh Kumar</i>	
 SESSION: KNOWLEDGE + INFORMATION ENGINEERING + RECOGNITION SYSTEMS + RETRIEVAL METHODS + SEARCH TECHNOLOGIES + EXPERT SYSTEMS 	
Recombinant Knowledge Relativity Threads for Contextual Knowledge Storage	281
<i>James Crowder, John Carbone</i>	
Knowledge Density Mapping for Derivation of Inference Potential	288
<i>James Crowder</i>	
Heuristic for Simulation Checking	293
<i>Antonella Santone</i>	
Keyword Extraction and Multiview Clustering of Trees for Search and Retrieval in Customer Product Forums	300
<i>Kivanc Ozonat</i>	
Application of a Novel Feature Selector for Human Activity Recognition Based on Inertial Monitored Data	307
<i>Oresti Banos, Miguel Damas, Hector Pomares, Ignacio Rojas, Beatriz Prieto</i>	

Improvement of Personalized Recommendation Algorithm Based Content-boosted Collaborative Filtering Algorithm	312
<i>Raja Sarath Kumar Boddu, John Ratnam Barre, Surendra Prasad Babu Maddali</i>	
SPXS Sports Picks eXpert System	320
<i>Luis Mateos</i>	
An Intelligent Method for Retrieval of Verbal Terms from the Web as Answers in Response to Complex Interrogative Sentences	326
<i>Hirokazu Watabe, Misako Imono, Eriko Yoshimura, Seiji Tsuchiya</i>	
Analysing Expert System Mechanism	332
<i>Sahil Gupta</i>	
A Web-based Prototype of Fish Image Searching System	338
<i>Xitao Zheng, Yongwei Zhang</i>	
Tracking Evolutionary Links Among Coronavirus Types Using Self-Organizing Neural Networks	343
<i>Francis Thamburaj, Gopinath Ganapathy</i>	
Evolvable Lip Contour Model for Emotion Recognition	349
<i>Sristi Shaw, Kanika Orea, Pavel Bhowmik, Anisha Halder, Aruna Chakraborty, Amit Konar, Atulya Nagar</i>	
SESSION: LEARNING METHODS AND RELATED ISSUES + MACHINE LEARNING	
Applying Context-Based Prediction in Adversarial Watkins' Q(Lambda) - Learning	359
<i>Arisoa S. Randrianasolo, Larry D. Pyeatt</i>	
A Learning Algorithm for Question Type Classification	365
<i>Richard Khoury</i>	
An Intelligent Othello Player Combining Machine Learning and Game Specific Heuristics	372
<i>Kevin Cherry, Jianhua Chen</i>	
Occam Learning Through Pattern Discovery: Computational Mechanics in AI Systems	380
<i>James Crowder, John Carbone</i>	
A Tool to Generate Computer Assisted Instruction Systems Through Hierarchical Classification	385
<i>Richard Fox, Michaela Schleifer, Jennifer Cellio</i>	

Relational Modeling in Social Media 392
David Ostrowski

Towards an Automated Composer of Popular Country Music 397
James Suruda, Norman Carver

Meta-learning Based Optimization of Social Feature Extraction Inference System 404
Wladimir Ormazabal, Tomas Arredondo, Werner Creixell, Sebastian Contreras, Patricio Olivares

A Guided Learning Algorithm for Solving the Traveling Salesman Problem 410
Shubham Shukla, Larry D. Pyeatt

SESSION: ARTIFICIAL INTELLIGENCE AND COGNITIVE SCIENCE

Metacognition and Metamemory Concepts for AI Systems 419
James Crowder, Shelli Friess

The Artificial Prefrontal Cortex: Artificial Consciousness 425
James Crowder, Shelli Friess

Why Is Missing What We Need 431
Vitor Manuel Dinis Pereira

SESSION: ARTIFICIAL NEURAL NETWORKS AND APPLICATIONS

Multi-Objective Optimisation in Time Series: Time Delay Agreement 439
Juan Carlos Cuevas-Tello, Hector G. Perez-Gonzalez

Facial Access Control Based on VG-RAM Weightless Neural Networks 444
Jairo Lucas de Moraes, Alberto F. De Souza, Claudine Badue

Application of Artificial Intelligence in Classification of Maritime Targets 451
Mohammed Rizk, Hatem Khater, Mostafa Abdelwahab

Multi-Layer Perceptrons and Conventional Adaptive Filters for Channel Estimation in CDMA System 458
Sahar Nasrzadeh, Mahdih Gehasemlou, Mehrdad Jalali

Neural Network Based Approach for Automotive Brake Light Parameter Estimation 463
Antonio Ortega, Ivan Silva

Voltage Sags/Swells Mitigation Using a Dynamic Voltage Restorer Controlled by Neural Network 468

Julio Cesar Suarez-Duarte, Elisa Espinosa-Juarez

Cascade-Correlation Neural Networks for Breast Cancer Diagnosis 475

Anatoli Nachev, Mairead Hogan, Borislav Stoyanov

Prediction of Groundwater Levels Using Different Artificial Neural Network Architectures and Algorithms 481

Sujatha Padala, Pradeep Kumar G.N.

Global Data Assimilation by Artificial Neural Networks for an Atmospheric General Circulation Model: Conventional Observation 488

Rosangela Cintra, Haroldo Campos Velho

A Reconfigurable Neural Network 495

Alan L. Breitler

SESSION: GENETIC ALGORITHMS + SIMULATED ANNEALING

Using Improved Memetic Algorithm and Local Search to Solve University Course Timetabling Problem (UCTP) 501

Majid Joudaki, Mehdi Imani, Niloofar Mazhari

Solving a Public Sector Sustainable Supply Chain Problem: A Genetic Algorithm Approach 507

Ernesto Del R. Santibanez-Gonzalez, Geraldo Robson Mateus, Henrique Pacca Luna

Comparing Genetic Algorithms and Simulated Annealing for Solving the Pickup and Delivery Problem with Time Windows 513

Manar Hosny

SESSION: NATURAL LANGUAGE PROCESSING AND RELATED ISSUES

PEN: Parallel English-Persian News Corpus 523

Mohammad Amin Farajian

Post-Logical Verification of Ontology and Lexicons: The Ontological Semantic Technology Approach 529

Julia M Taylor, Christian F Hempelmann, Victor Raskin

Taxonomy and Evaluation of Markers for Computational Stylistics 535

Foaad Khosmood, Robert Levinson

Contrasting Machine Learning Approaches for Microtext Classification 543

Jeffrey Ellen

Automatic Programming through Natural Language Compiler	549
<i>Kalyanasudaram Somasundaram, Harish Swaminathan</i>	
Generating A Sentence From A Thought	554
<i>Waleed Faris, Kam-Hoi Cheng</i>	
Word Sense Disambiguation for Arabic Language Using the Variants of the Lesk Algorithm	561
<i>Anis Zouaghi, Laroussi Merhben, Mounir Zrigui</i>	
Arabic Call System based on Pedagogically Indexed Text	568
<i>Mohamed Achraf Ben Mohamed, Dhaou El Ghou, Mohamed Amine Nahdi, Mourad Mars, Mounir Zrigui</i>	
@rabLearn - A Model of NLP Tools Integration in ICALL Systems	575
<i>Mourad Mars, Georges Antoniadis, Mounir Zrigui</i>	
The Analysis of Print Media Discourse in the Election Context	580
<i>Daniela Gifu</i>	
Interaction Matrix Model for Language Production	587
<i>Steven Gibson</i>	
Research on Rule-based Chinese Syntactic Parsing Postprocess Using Verb Subcategorization	590
<i>Jinyong Wang, Xiwu Han</i>	
 SESSION: WORKSHOP ON INTELLIGENT LINGUISTIC TECHNOLOGIES, ILINTEC'11 	
Graph Decomposition and its Use for Ontology Verification and Semantic Representation	599
<i>Julia M Taylor, Victor Raskin</i>	
Textometry and Information Discovery: A New Approach to Mining Textual Data on the Web	605
<i>Erin MacMurray, Marguerite Leenhardt</i>	
Hypernodes in the UNL Interlingua	612
<i>Igor Boguslavsky</i>	
Lexical and Semantic Methods in Design of the Problem-oriented Linguistic Resources	618
<i>Olga Kozhunova</i>	

**SESSION: XI TECHNICAL SESSION ON APPLICATIONS OF ADVANCED AI
TECHNIQUES TO INFORMATION MANAGEMENT FOR SOLVING
COMPANY-RELATED PROBLEMS**

Integrated System for Managing Traceability in Intermodal Logistic Environments 627

Javier Duran, Beatriz Del Pino, Carlos Andres, Eva Ochoa de Olano, Magin Diaz, Nazario Garcia

Heuristic Solutions to the Vehicle Routing Problem with Capacity Constraints 634

Raul Pino, Veronica Villanueva, Carlos Martinez, Jesus Lozano, Beatriz Del Pino, Carlos Andres

Comparative Analysis of Artificial Intelligence Techniques for Goods Classification 641

Isabel Fernandez, Gonzalez Diego, Alberto Gomez, Paolo Priore, Javier Puente, Jose Parreño

Forecasting S&P500 Index Movement with Support Vector Machines 648

Rafael Rosillo, David De la Fuente, José A. L. Brugos

**Using Cloud Computing with RETE Algorithms in a Platform as a Service (PaaS) for
Business Systems Development** 654

Richard Poblete, David De la Fuente, Margarita Alonso

A Fuzzy Linguistic Model for Generating Similar Short Queries 659

Jesus Serrano-Guerrero, Francisco P. Romero, Emilio Fernandez-Vinas, Jose J. Ruiz-Morilla, Jose A. Olivas

From Text Documents to Causal Mechanisms 666

Cristina Puente, Jose A. Olivas, Roberto Merlo

Intentional Tags in Folksonomy Based Ranking Systems 671

Pedro Lopez Juarez, Jose A. Olivas

**SESSION: FUZZY COGNITIVE MAPS + FUZZY SETS + FUZZY MODELS AND
APPLICATIONS**

**Application of Fuzzy Cognitive Maps using Semantic Web Approaches to Model Medical
Knowledge** 677

Elpiniki Papageorgiou, Jos De Roo, Csaba Huszka, Dirk Colaert

Creating a Suicide Note Analysis Model Using Fuzzy Cognitive Maps 684

Ethan White, Lawrence Mazlack

**Autonomous Real-Time Site Selection for Venus and Titan Landing Using Evolutionary
Fuzzy Cognitive Maps** 691

Roberto Furfaro, Jeffrey Kargel, Wolfgang Fink

Importance of Factors Effective upon Consumers' Perception of Fairness in Dynamic Pricing: An FCM Approach	698
<i>Yashar Dehdashti, Nooshin Lotfi, Aidin Tajzadehnamin, Manoochehr Najmi</i>	
A Robust TFPDC Based Power System Stabilizer	706
<i>Heidarali Shayanfar, Aref Jalili, H. Shayeghi</i>	
GSA to Tune Fuzzy Controller for Damping Power System Oscillation	713
<i>Heidarali Shayanfar, Oveis Abedinia, Mohammad Salay Naderi, Ali Ghasemi</i>	
Applying Fuzzy Image Processing Technology to Inspect Defects of Thin Film Transistor-Liquid Crystal Display	720
<i>Chung-Feng Jeffrey Kuo, Chin-Hsun Chiu, Tai-Yuan Su, Kai-Ching Peng</i>	
Genetic-PSO Fuzzy Data Mining With Divide and Conquer Strategy	725
<i>Amin Jourabloo</i>	
A Fuzzy Causal Decision-Making Model for IT Investment Evaluation	730
<i>Pei-Chi Chen, Ching-Chin Chern, Gwo-Hshiung Tzeng</i>	
A Fuzzy Inference System for Lightning Location	736
<i>Luisa Barrera Escobar, Sebastian Salazar Castano, Freddy Bolanos Martinez</i>	
SESSION: NEURAL NETWORKS + AGENT TECHNOLOGY + NLP + DATA MINING + ALGORITHMS AND NOVEL APPLICATIONS	
A Sales Forecasting Model for an Automotive Distributing Company	743
<i>Jessica Souza, Celso Camilo-Junior</i>	
Application of Neural Network to Detection of Cardiac Disease	750
<i>Lakshmi Rajamani, Rajamani A</i>	
A New Approach to Modeling Cognitive Information Learning Process using Neural Networks	756
<i>Sajjad Mohsin, Fatima Zaka</i>	
Applying Prediction Methods for Nonstationary Time Series from an Distributing Company	764
<i>Jeuel Alves, Celso Camilo-Junior</i>	
Forecasting Generation Waste Using Artificial Neural Networks	770
<i>Elmira Shamshiry, Behzad Nadi, Mazlin Bin Mokhtar, Ibrahim Komoo, Halimatun Saadiah Hashim, Nadzri Yahya</i>	

An Autonomous Approach fo Environmental Impact Assessment in Alexandria Marine Environment	778
<i>Hesham A. Elzouka</i>	
Detection and Grading of Astrocytoma Tumor in MR Brain Images Using Neural Network	785
<i>Ashwani Kumar Grain , Virender Rihani</i>	
Integrated Controller for Fixed Speed, Grid Connected Wind Turbine, Based on Neural Networks	791
<i>Alaa Hashad, Fathy Zaky Amer, Ahmed El-Garhy, Ahmed E. Youssef, Sabry Maly Aly</i>	
A Recurrent Neural Sleep-Stage Classifier Using Energy Features of EEG Signals	798
<i>Jeen-Shing Wang, Ya-Ting Yang, Chung-Yao Hsu, Yu-Liang Hsu</i>	
A Linear Classifier Outperforms UCT in 9x9 Go	804
<i>Nick Sylvester, Bennett Lohre, Samuel Dodson, Peter Drake</i>	
COAST: An Architecture Based on Negotiation Among Competitive Agents for Automated Asset Management	808
<i>Paulo Andre Lima de Castro, Jaime Simao Sichman</i>	
Using Multiagent Planning in the Hoshimi Project	815
<i>Bruno Nepomuceno, Carlos Lopes</i>	
Crowds and Spontaneous Collaboration	819
<i>Henry Hexmoor</i>	
Architecture for Design and Development of Security Systems based on Agent Technology	826
<i>M. Guadalupe Cota, J. Pablo Soto</i>	
Air Holding Problem Module to Decision Support in Air Traffic Flow Management	832
<i>Leonardo L. B. V. Cruciol , Li Weigang</i>	
Challenges in Distributed Coalition Formation among Collaborative Multi-Agent Systems: An Experimental Case Study on Small-World Networks	838
<i>Predrag Tasic, Naveen Ginne</i>	
Improved Ant Clustering Algorithm	845
<i>Chandra B, Abhishek Karpade , Piyush Mehta</i>	
Emotional Agents Outreach: An Undergraduate Research Project	851
<i>Bethel Tarekegne, Hong Jiang, Cedrik Brown, Kory Griggs</i>	
Developing a Concept Extraction System for Turkish	855
<i>Meryem Uzun-Per, Hidayet Takci, Tunga Gungor</i>	

On the Optical Character Recognition and Machine Translation Technology in Arabic - Problems and Solutions	861
<i>Oleg Redkin, Olga Bernikova</i>	
Semi-automatic Verb-driven Lexicon Acquisition Enhancer	868
<i>Max Petrenko</i>	
Syntactic Transformations Modelling for Hybrid Machine Translation	875
<i>Elena Kozerenko</i>	
Semantic Approach to Explicit and Implicit Knowledge Extraction	882
<i>Igor Kuznetsov, Elena Kozerenko</i>	
Set-Phrase Machine Translation Based on Multilingual Dictionaries	888
<i>Alexander Khoroshilov, Alexei Khoroshilov</i>	
Sana'ani Dialect to Modern Standard Arabic: Rule-based Machine Translation	892
<i>Yahya Alamlahi, Fateh Ahmed</i>	
An Automatic Punctuation Marks System for Arabic Texts	896
<i>Hassan Mathkour , M.S. Aksoy, Ameer Touir, Alaeldin Hafez</i>	
Building an Adaptive Parser for Natural Language Processing:A Message Driven Adaptive Parallel Parsing Engine (MAPPE)	901
<i>Mohammed El-Affendi</i>	
Improving Prediction Accuracy in Random Forest by Using Feature Impurity and Bayesian Probability	908
<i>Cuong Nguyen, HaNam Nguyen, Yong Wang</i>	
Heuristic for Finding the Tuning Number in Data Mining	914
<i>Abolfazl Fatholahzadeh</i>	
Predicting Breast Cancer Survivability Rates: For data collected from Saudi Arabia Registries	918
<i>Ghofran Othoum, Wadee Al-Halabi</i>	
A Feature Selection Method Based on a Support Vector Machine and the Cumulative Distribution Function	923
<i>Jen-Ing Hwang , Chih-En Liu</i>	
In Vitro Fertilization Genetic Algorithm Applied to Multidimensional 0-1 Knapsack Problem	928
<i>Celso Camilo-Junior, Keiji Yamanaka</i>	

Development of a Diagnostic Expert System for Autism Disorder-PCADEx	934
<i>Sadaf Sajjad, Hira Qamar, Khadija Tariq, Saira Bano</i>	
Optimal Placement and Tuning of Robust Multimachine PSS via HBMO	939
<i>Ali Ghasemi, Heidarali Shayanfar, Mohammad S. Naderi, Abedinia Oveis</i>	
Analyzing the Classifier using the Knowledge Hierarchy	945
<i>Zhiyong Yan, Congfu Xu</i>	
A Tool for Web Links Prototyping	951
<i>Inma Hernandez, Hassan A. Sleiman, David Ruiz, Rafael Corchuelo</i>	
Unsupervised Texture Image Classification using Self-Organizing Maps	958
<i>Nedyalko Petrov, Ivan Jordanov</i>	
A Transducer Model for Web Information Extraction	965
<i>Hassan A. Sleiman, Inma Hernandez, Gretel Fernandez, Rafael Corchuelo</i>	
On improving FOIL Algorithm	970
<i>Patricia Jimenez, J.L. Arjona, J.L. Alvarez</i>	
A Review On Sensory Feedback for sEMG Based Prosthetic Hands	975
<i>Madhavi Anugolu, Chandrasekhar Potluri, Adnan Ilyas, Parmod Kumar, Steve Chiu, Nancy Devine, Alex Urfer, Marco P. Schoen</i>	
An Activity Recording System with a Radial-Basis-Function-Network-Based Energy Expenditure Regression Algorithm	980
<i>Jeen-Shing Wang, Ya-Ting Yang, Che-Wei Lin</i>	
Using Search and Learning for Production of Resources in RTS Games	984
<i>Augusto Branquinho, Carlos Lopes, Thiago Naves</i>	
Multifractal Phenomena in EcoSim, a large scale Individual-Based Ecosystem Simulation	991
<i>Abbas Golestani, Robin Gras</i>	

