

1. Record Nr.	UNISA996465683203316
Titolo	Advances in Artificial Intelligence [[electronic resource]] : 10th Mexican International Conference on Artificial Intelligence, MICAI 2011, Puebla, Mexico, November 26 - December 4, 2011, Proceedings, Part I // edited by Ildar Batyrshin, Grigori Sidorov
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2011
ISBN	3-642-25324-5
Edizione	[1st ed. 2011.]
Descrizione fisica	1 online resource (XXV, 596 p.)
Collana	Lecture Notes in Artificial Intelligence ; ; 7094
Disciplina	006.3
Soggetti	Artificial intelligence Optical data processing Application software Pattern recognition Data mining Artificial Intelligence Computer Imaging, Vision, Pattern Recognition and Graphics Image Processing and Computer Vision Information Systems Applications (incl. Internet) Pattern Recognition Data Mining and Knowledge Discovery
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Title -- Preface -- Organization -- Table of Contents -- Automated Reasoning and Multi-Agent Systems -- Case Studies on Invariant Generation Using a Saturation Theorem Prover -- Introduction -- Preliminaries -- Symbol Elimination and Invariant Generation in Vampire -- Program Analysis in Vampire -- Theory Reasoning in Vampire -- Symbol Elimination in Vampire -- Pruning Generated Invariants -- Proving Invariants, Postconditions, and Assertions -- Experimental Results -- Challenging Benchmarks -- Industrial Examples -- Analysis of Experiments -- Related Work -- Conclusions -- References -- Characterization of Argumentation

Semantics in Terms of the MMR Semantics -- Introduction --
Background -- Syntax and Some Operations -- The MMR Semantics --
Argumentation Theory -- Relation between CF2 and MMR -- Preferred
Extension and MMR Semantics -- Conclusions -- References --
Learning Probabilistic Description Logics: A Framework and Algorithms
-- Introduction -- Basics -- Description Logics -- Probabilistic
Description Logics and crALC -- Learning Description Logics --
Learning with the PDL crALC -- The Probabilistic Score Function -- The
Algorithm to Learn Probabilistic Terminologies -- Experiments --
Experiments on Description Logic Learning -- Experiments on Learning
Probabilistic Terminologies -- Conclusion -- References -- Belief
Merging Using Normal Forms -- Introduction -- Preliminaries --
Normal Partial Satisfiability -- Comparing Results -- Postulates --
Algorithm PS-Merge -- Prime Implicant-Based Merging -- Conclusion
-- References -- Toward Justifying Actions with Logically and Socially
Acceptable Reasons -- Introduction -- Background and Objectives --
Related Work -- Motivating Example -- Logical Preliminaries --
Structuring Arguments and Defeat Functions -- Practical and
Theoretical Arguments.
Theoretical, Preference-Based and Welfare-Based Defeats -- Justifying
Logically and Socially Acceptable Reasons -- Analyzing Structured
Practical Argumentation Frameworks -- Analyzing Layered Practical
Argumentation Frameworks -- Illustrative Example -- Conclusions and
Future Work -- References -- A Complex Social System Simulation
Using Type-2 Fuzzy Logic and Multiagent System -- Introduction --
Representation of Uncertainty in a MAS -- Simulation of a Social
Complex System -- Interactions between Agents -- Use of Type-2
Fuzzy Logic -- Simulation Results -- Conclusions and Future Work --
References -- Computing Mobile Agent Routes with Node-Wise
Constraints in Distributed Communication Systems -- Introduction --
Problem Formulation -- Algorithm Description -- Dynamic
Programming (DP) Algorithm -- General Description of the FPTAS --
Stage A: Finding Preliminary Lower and Upper Bounds for PN1 -- Stage
B: Finding Improved Bounds for PN1 -- Stage C: The ϵ -
Approximation Algorithm -- Discussion and Concluding Remarks --
References -- Collaborative Redundant Agents: Modeling the
Dependences in the Diversity of the Agents' Errors -- Introduction --
Related Work -- A Model of Dependences for Collaborative Agents --
Experiments and Analyses -- Conclusions and Future Work --
Modeling and Using Dependences in Trust and Reputation Networks --
References -- Strategy Patterns Prediction Model (SPPM) -- Introduction
-- RoboCup 2D Soccer Simulator -- Knowledge Base Creation -- In-
Game Features -- Results Obtained -- Conclusions and Further Work
-- References -- Fuzzy Case-Based Reasoning for Managing Strategic
and Tactical Reasoning in StarCraft -- Introduction -- Related Work --
Strategic Reasoning -- Strategy Selection -- Case Representation for
Strategies -- Methodology to Build the Case Base -- Matching Treat --
Tactical Reasoning.
Abstraction of the Space -- Fuzzy Case Representation -- Fuzzy Sets
and Case Base -- Fuzzy Matching Method -- Experiments and Results
-- Conclusions and Future Work -- References -- Problem Solving and
Machine Learning -- Variable and Value Ordering Decision Matrix
Hyper-heuristics: A Local Improvement Approach -- Introduction --
Solution Approach -- Variable and Value Ordering -- CSP Instances and
the Problem State Representation -- The Decision Matrix Hyper-
heuristic and the Local Improvement Approach -- Experiments and
Results -- Experiment I -- Experiment II -- Experiment III --
Conclusions -- References -- Improving the Performance of Heuristic

Algorithms Based on Causal Inference -- Introduction -- Learning Explanations through Causal Inference -- Causal Models -- Learning Causal Models from Data -- Causal Analysis of Parameters in WABP Algorithm -- Weight Annealing Algorithm for the Bin Packing Problem -- Experimental Design -- Learning a Causal Model from the Experimental Data -- Conclusions and Future Work -- References -- Fuzzified Tree Search in Real Domain Games -- Introduction -- Current Situation in Game Tree Search -- The Fuzzy Approach -- The Fuzzified Search Algorithm -- Game Setup -- Experimental Results -- Conclusions and Future Work -- References -- On Generating Templates for Hypothesis in Inductive Logic Programming -- Introduction -- Background -- Incremental Template Generation -- History-Driven Tabu Template Generation -- Stochastic Extension of History-Driven Tabu Template Generation -- Experimental Results -- Conclusions -- References -- Towards Building a Masquerade Detection Method Based on User File System Navigation -- Introduction -- Masquerade Detection -- The SEA Dataset -- Masquerade Detection Mechanisms: An Overview -- Navigation Structures -- Access Graph -- Directory Graph -- Some Preliminary Results.

Construction- and Validation-Masquerade Datasets -- Experimentation Results -- Discussion -- Conclusions -- References -- A Fast SVM Training Algorithm Based on a Decision Tree Data Filter -- Introduction -- Preliminaries -- Support Vector Machines -- Decision Trees -- Implementing a Data Filter Algorithm -- Algorithm Description -- SVM Training Based on Data Filter -- Experimental Results and Comparison -- Data Sets -- Classification Accuracy and Training Time -- Conclusions and Future Work -- References -- Optimal Shortening of Covering Arrays -- Introduction -- Problem Definition -- Related Work -- The OSCAR Problem Is NP-Complete -- Algorithms to Solve the OSCAR Problem -- Greedy Algorithm to Solve the OSCAR Problem -- Exact Algorithm to Solve OSCAR Problem -- Experimentation and Results -- Conclusions -- References -- An Exact Approach to Maximize the Number of Wild Cards in a Covering Array -- Introduction -- Background -- Exact Approach for Wild Card Detection -- Symbol Fixing Process -- Exact Algorithm for Wild Card Identification: wcBBCA -- Experimental Results -- Experiment 1: Identification of Wild Cards in a CA Benchmark -- Experiment 2: Wild Card Profile Detection for Larger CAs -- Experiment 3: Diversity in the Wild Card Profiles -- Conclusions -- References -- Intelligent Learning System Based on SCORM Learning Objects -- Introduction -- SCORM Sequencing -- Intelligent Tutoring Systems -- Sequencing and Navigation in ITS -- Using Probabilistic Graphical Models for Adaptive Sequence -- Using Decision Networks in the Sequencing and Navigation of Los -- Intelligent Learning System Based on Learning Objects -- General Architecture of the System -- Domain Knowledge Model -- Tutor Module -- Case Study -- Description of the Evaluation Process -- Results and Discussion -- Model Validation in Electrical Sector -- Conclusions -- References.

Natural Language Processing -- A Weighted Profile Intersection Measure for Profile-Based Authorship Attribution -- Introduction -- Related Work -- Proposed Method -- Experimental Evaluation -- Authorship Attribution Data Sets -- CNG-SPI vs CNG-WPI -- CNG-SPI vs Classification-based methods -- Conclusions -- References -- A New General Grammar Formalism for Parsing -- Introduction -- Grammatical Framework -- ConstrainedW-Grammars -- Probabilistic CW-Grammars -- Learning CW-Grammars from Tree-Banks -- Some Further Technical Notions -- Capturing State of the Art Parsers --

Bilexical Grammars -- Markov Rules -- Stochastic Tree Substitution Grammars -- References -- Contextual Semantic Processing for a Spanish Dialogue System Using Markov Logic -- Introduction -- Dialogue Models -- Semantic Processing -- Word Enhanced Spotting -- Markov Logic -- Corpus -- Experiments -- Exploratory and Baseline Experiments -- Context Experiments -- Results -- Conclusions -- References -- A Statistics-Based Semantic Textual Entailment System -- Introduction -- Related Work -- Universal Networking Language -- System Description -- UNL En-Conversion Module -- Pre-processing Module -- Scoring Module -- Decision Module -- Experimental Results -- Error Analysis -- Conclusions -- References -- Semantic Model for Improving the Performance of Natural Language Interfaces to Databases -- Introduction -- Background -- Problems in Queries -- Semantically Enriched Database Modeling -- Grammatical Descriptors -- Entities -- Attributes -- Relationships -- Specialization and Generalization -- SEM Representation -- Case Study -- Final Remarks and Future Work -- References -- Modular Natural Language Processing Using Declarative Attribute Grammars -- Introduction -- General Notation -- Underlying Foundation -- Grammars, Top-Down Parser and Combinators. Declarative and Executable Attribute Grammars.

Sommario/riassunto

The two-volume set LNAI 7094 and LNAI 7095 constitutes the refereed proceedings of the 10th Mexican International Conference on Artificial Intelligence, MICAI 2011, held in Puebla, Mexico, in November/December 2011. The 96 revised papers presented were carefully reviewed and selected from numerous submissions. The first volume includes 50 papers representing the current main topics of interest for the AI community and their applications. The papers are organized in the following topical sections: automated reasoning and multi-agent systems; problem solving and machine learning; natural language processing; robotics, planning and scheduling; and medical applications of artificial intelligence.
