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Ebook: New Trends in Software Methodologies, Tools and Techniques



Series: Frontiers in Artificial Intelligence and Applications
 Volume: 265
 Published: 2014
 Editors: Hamido Fujita, Ali Selamat, Habibollah Haron
 ISBN: 978-1-61499-433-6 (print) | 978-1-61499-434-3 (online)

Description

Software is the essential enabling means for science and the new economy. It helps us to create a more reliable, flexible and robust society. But software often falls short of our expectations. Current methodologies, tools, and techniques remain expensive and are not yet sufficiently reliable, while many promising approaches have proved to be no more than case-by-case oriented methods.

This book contains extensively reviewed papers from the thirteenth International Conference on New Trends in software Methodology, Tools and Techniques (SoMeT_14), held in Langkawi, Malaysia, in September 2014. The conference provides an opportunity for scholars from the international research community to discuss and share research experiences of new software methodologies and techniques, and the contributions presented here address issues ranging from research practices and techniques and methodologies to proposing and reporting solutions for global world business. The emphasis has been on human-centric software methodologies, end-user development techniques and emotional reasoning, for an optimally harmonized performance between the design tool and the user. Topics covered include the handling of cognitive issues in software development to adapt it to the user's mental state and intelligent software design in software utilizing new aspects on conceptual ontology and semantics reflected on knowledge base system models.

This book provides an opportunity for the software science community to show where we are today and where the future may take us.

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Preface

Software is the essential enabler for science and the new economy. It creates new markets and new directions for a more reliable, flexible and robust society. It empowers the exploration of our world in ever more depth. However, software often falls short of our expectations. Current software methodologies, tools, and techniques remain expensive and are not yet sufficiently reliable for a constantly changing and

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Chapter 1. Artificial Intelligence Techniques on Software Engineering, and Requirement Engineering

Pages: 1 - 1

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Automatic Music Emotion Classification Using Artificial Neural Network Based on Vocal and Instrumental Sound Timbres

Authors: Mudiana Binti Mokhsin, Nurlaila Binti Rosli, Wan Adilah Wan Adnan, Norehan Abdul Manaf

Pages: 3 - 14
 DOI: 10.3233/978-1-61499-434-3-3

Abstract

Detecting emotion features in a song remains as a challenge in various area of

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User's Satisfaction in Recommendation Systems

Authors: Shahid Kamal, Roliana Ibrahim, Imran Ghani
 Pages: 15 - 25
 DOI: 10.3233/978-1-61499-434-3-15

Abstract

A significant response to the information overload problem currently being experienced as a result of the enormous advent of internet usage has been

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<p>Rice-Planted Area Extraction by RADARSAT Data by Competitive Neural Networks</p> <p>Authors Sigeru Omatu, Mitsuaki Yano Pages 26 - 36 DOI 10.3233/978-1-61499-434-3-26</p> <p>Abstract</p> <p>The classification technique using the neural networks has been recently developed. We apply a competitive neural network of Learning Vector Quantization (LVQ) to</p> <p>↓ more</p>	<p>\$20.00 / €15.00 / £10.00 Add PDF to cart</p>
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<p>Hybridization of Hidden Markov Model and Case Based Reasoning for Time Series Forecasting</p> <p>Authors Azuanda Azlina Zahari, Jafrezal Jaafar Pages 63 - 74 DOI 10.3233/978-1-61499-434-3-63</p> <p>Abstract</p> <p>In the past few years, tremendous studies have been made to examine the accuracy of time series forecasting that provide the foundation for decision models in foreign</p> <p>↓ more</p>	<p>\$20.00 / €15.00 / £10.00 Add PDF to cart</p>
<p>The Interaction of Subsystems Operating in a Container Terminal: Modeling Peculiarities and Simulation Solutions for the Logistics Chain Optimization</p> <p>Authors Guseppe Converso, Mosè Gallo, Teresa Murino Pages 75 - 93 DOI 10.3233/978-1-61499-434-3-75</p> <p>Abstract</p> <p>A container terminal functioning depends on the interaction of numerous subsystems,</p> <p>↓ more</p>	<p>\$20.00 / €15.00 / £10.00 Add PDF to cart</p>
<p>An Improved Intrusion Detection Approach using Synthetic Minority Over-Sampling Technique and Deep Belief Network</p> <p>Authors S. Hasan Adil, S. Saad Azhar Ali, Kamran Raza, A. Mahmood Hussaan Pages 94 - 102 DOI 10.3233/978-1-61499-434-3-94</p> <p>Abstract</p> <p>This paper presents a network intrusion detection technique based on Synthetic</p> <p>↓ more</p>	<p>\$20.00 / €15.00 / £10.00 Add PDF to cart</p>
<p>Feasibility of Text Visualization in Text Steganalysis</p> <p>Authors Rose Hafsa Ab. Rauf, Nurhafizah Jamal Pages 103 - 115 DOI 10.3233/978-1-61499-434-3-103</p> <p>Abstract</p> <p>Text steganography was never a threat until it has been manipulated by cyber criminals or terrorist for their own benefit. Secret messages sent through steganography with bad intent can cause harm and to the extent jeopardizing the</p>	<p>\$20.00 / €15.00 / £10.00 Add PDF to cart</p>

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Hybrid Genetic Algorithm of Interferometric Synthetic Aperture Radar For Three-Dimensional Coastal Deformation

Authors Maged Marghany
 Pages 116 - 131
 DOI 10.3233/978-1-61499-434-3-116

Abstract

The paper has demonstrated InSAR phase unwrapping using Hybrid Genetic Algorithm (GHA). The three dimensional phase unwrapping is performed using three-

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A Probabilistic Logic to Reason about the Interaction between Knowledge and Social Commitments in MASs

Authors Khalid Sultan, Jamal Bentahar, Omar Marey
 Pages 132 - 147
 DOI 10.3233/978-1-61499-434-3-132

Abstract

In this paper, we develop a probabilistic approach to formally represent and reason about the interaction between knowledge and social commitments in Multi-Agent

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An Evolutionary Algorithm for Simultaneous Localization And Mapping (SLAM) With A New Fitness Function

Authors Mohsen Mahrami, Habibollah Haron, Ali Asadi
 Pages 148 - 159
 DOI 10.3233/978-1-61499-434-3-148

Abstract

In the robotic world, SLAM (Simultaneous Localization And Mapping) is a well-known and difficult problem. For solving this problem many solutions have been presented

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Synchronous Gravitational Search Algorithm vs Asynchronous Gravitational Search Algorithm: A Statistical Analysis

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Gravitational search algorithm (GSA) is a new member of swarm intelligence

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Performance Evaluation of Vector Evaluated Gravitational Search Algorithm II

Authors Badaruddin Muhammad, Zuwairie Ibrahim, Kamarul Hawari Ghazali, Mohd Riduwan Ghazali, Muhammad Salihin Saealal, Kian Sheng Lim, Sophan Wahyudi Nawawi, Nor Azlina Ab. Aziz, Marizan Mubin, Norrima Mokhtar
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Abstract

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An Assembly Sequence Planning Approach with Binary Gravitational Search Algorithm

Authors Ismail Ibrahim, Zuwairie Ibrahim, Hamzah Ahmad, Zulkifli Md. Yusof, Mohd Ibrahim Shapiai, Sophan Wahyudi Nawawi, Marizan Mubin
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Authors Francisco Javier Cabrerizo, Witold Pedrycz, Francisco Chiclana, Enrique Herrera-Viedma
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 DOI 10.3233/978-1-61499-434-3-194

Abstract

An important issue to bear in mind in Group Decision Making situations is that of

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A Framework for Improvement a Decision Tree Learning Algorithm Using K-NN

Authors Masaki Kurematsu, Jun Hakura, Hamido Fujita
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 DOI 10.3233/978-1-61499-434-3-206

Abstract

In this paper, we proposed a modified decision tree learning algorithm. In order to improve the traditional decision tree learning algorithm, we modified a predict phase

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Subjective Decision Making for Task Worker using Metaheuristics Technique

Authors Kohei Sugawara, Hamido Fujita
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 DOI 10.3233/978-1-61499-434-3-213

Abstract

Opportunity of decision making for improving work efficiency is often occurred in work environment. Although typically appropriate task assignment for improving work

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Chapter 2. Requirement Engineering, Especially for High-Assurance System, and Requirement Elicitation

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MEReq: A Tool to Capture and Validate Multi-Lingual Requirements

Authors Massila Kamalrudin, Safiah Sidek, Noorrezam Yusop, John Grundy, John Hosking
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Abstract

Within the era of globalisation that acknowledges differences and diversity, multiple

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Automatic Acceptance Test Case Generation From Essential Use Cases

Authors Massila Kamalrudin, M. Nor Aiza, John Grundy, John Hosking, Mark Robinson
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 DOI 10.3233/978-1-61499-434-3-246

Abstract

Requirements validation is a crucial process to determine whether client-stakeholders'

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Integration of Safety Risk Assessment Techniques into Requirement Elicitation

Authors Eileen Yeow, Yin Kia Chiam
 Pages 256 - 270
 DOI 10.3233/978-1-61499-434-3-256

Abstract

Incomplete and incorrect requirements may cause the safety-related software systems to fail to achieve their safety goals. It is crucial to ensure software safety by

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Classifying Software Requirements Using Kano's Model to Optimize Customer Satisfaction

Authors Balsam A. Mustasfa
 Pages 271 - 279
 DOI 10.3233/978-1-61499-434-3-271

Abstract

Requirements elicitation is a critical and error-prone stage in software development where user requirements should be defined accurately to ensure the success of the

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