

# **Studies in Computational Intelligence**

Volume 722

## **Series editor**

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### *About this Series*

The series “Studies in Computational Intelligence” (SCI) publishes new developments and advances in the various areas of computational intelligence—quickly and with a high quality. The intent is to cover the theory, applications, and design methods of computational intelligence, as embedded in the fields of engineering, computer science, physics and life sciences, as well as the methodologies behind them. The series contains monographs, lecture notes and edited volumes in computational intelligence spanning the areas of neural networks, connectionist systems, genetic algorithms, evolutionary computation, artificial intelligence, cellular automata, self-organizing systems, soft computing, fuzzy systems, and hybrid intelligent systems. Of particular value to both the contributors and the readership are the short publication timeframe and the worldwide distribution, which enable both wide and rapid dissemination of research output.

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Editor

# Software Engineering Research, Management and Applications



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# Foreword

The purpose of the 15th International Conference on Software Engineering, Artificial Intelligence Research, Management and Applications (SERA 2017) held on 7–9 June 2016 at the University of Greenwich, UK, is aimed at bringing together scientists, engineers, computer users, and students to share their experiences and exchange new ideas and research results about all aspects (theory, applications, and tools) of Software Engineering Research, Management, and Applications, and to discuss the practical challenges encountered along the way and the solutions adopted to solve them. The conference organizers selected the best 12 papers from those papers accepted for presentation at the conference in order to publish them in this volume. The papers were chosen based on review scored submitted by members of the program committee and underwent further rigorous rounds of review.

In Chap. “[Agile Web Development Methodologies: A Survey and Evaluation](#)”, Nasrin Ghasempour Maleki and Raman Ramsin provide a criteria-based evaluation of fourteen agile Web development methodologies. The evaluation results highlight the strengths and weaknesses of the methodologies as to their general processes, modelling languages, agile features, and Web development facilities and can, therefore, help Web developers choose the methodology that best fits their project needs.

In Chap. “[Load Experiment of the vDACS Scheme in Case of Increasing the Simultaneous Connection for the DACS SV](#)”, Kazuya Odagiri, Shogo Shimizu, and Naohiro Ishii perform a load experiment of the cloud type virtual PBNM named the vDACS Scheme, which can be used by plural organizations, for applications to the small- and medium-size scale organizations.

In Chap. “[Blind Channel Estimation Using Novel Independent Component Analysis with Pulse Shaping for Interference Cancellation](#)”, Renuka Bhandari and Sangeeta Jadhav designing the novel blind channel estimation approach using independent component analysis (ICA) with both ISI cancellation and blind interference cancellation. This method is named as hybrid ICA (HICA).

In Chap. “[Anticipated Test Design and its Application to Evaluate and Select Embedded Libraries](#)”, Clauriton Siebra, Carla Nascimento, Leonardo Sodre, Antônio Cavalcanti, Daniel Barros, Fernando Lima, Fernando Cruz, Fábio Q. B. da Silva, and Andre L M Santos present an anticipated test design methodology; their work applies this strategy to the development of a set of libraries that are used in several other projects.

In Chap. “[Improving Web Application Reliability and Testing Using Accurate Usage Models](#)”, Gity Karami and Jeff Tian examine the impact of accurate usage models on reliability, test coverage, and test efficiency. A case study is carried out to quantify this impact. They found supporting evidence that accurate Markov OP improves reliability, test coverage, and test efficiency.

In Chap. “[C-PLAD-SM: Extending Component Requirements with Use Cases and State Machines](#)”, Kevin A. Gary and M. Brian Blake describe an extension to the C-PLAD approach, dubbed C-PLAD-SM, which addresses the gaps in their earlier work.

In Chap. “[A Structural Rule-Based Approach for Design Patterns Recovery](#)”, Mohammed Ghazi Al-Obeidallah, Miltos Petridis, and Stelios Kapetanakis present a multiple levels detection approach (MLDA) to recover design pattern instances from Java source code. MLDA is able to extract design pattern instances based on a generated class-level representation of an investigated system.

In Chap. “[DRSS: Distributed RDF SPARQL Streaming](#)”, Amadou Fall Dia, Zakia Kazi-Aoul, Aliou Boly, and Elisabeth Metais present DRSS, a distributed and scalable engine for RDF streams processing. DRSS proposes a new query syntax for continuous querying of RDF data streams.

In Chap. “[An Efficient Approach for Real-Time Processing of RDSZ-Based Compressed RDF Streams](#)”, Ndeye Bousso Deme, Amadou Fall Dia, Aliou Boly, Zakia Kazi-Aoul, and Raja Chiky propose an approach for continuous querying RDSZ-based RDF streams without decompression phase. They add three algorithms from simple to aggregate query execution over RDSZ-compressed items.

In Chap. “[Energy Efficiency Cluster Head Election Using Fuzzy Logic Method for Wireless Sensor Networks](#)”, Wided Abidi and Tahar Ezzedine introduce a new clustering algorithm which elects CHs using fuzzy logic method and based on a set of parameters which increases the lifetime of WSN.

In Chap. “[Enabling GSD Task Allocation via Cloud-Based Software Processes](#)”, Sami Alajrami, Barbara Gallina, and Alexander Romanovsky propose to integrate and semi-automate the calculation of an existing global distance metric (GDM) into an architecture that supports executing cloud-based software processes.

In Chap. “[Composite Event Handling over a Distributed Event-Based System](#)”, Amina Chaabane, Salma Bradai, Wassef Louati, and Mohamed Jmaiel address the

structured peer-to-peer network shortcomings. They exploit advantages offered by structured topology (distributed hash table DHT) and extend it by novel approach in order to improve expressiveness by supporting complex event processing (CEP).

It is our sincere hope that this volume provides stimulation and inspiration, and that it will be used as a foundation for works to come.

June 2017

Program Chairs:  
Lachlan MacKinnon  
Jixin Ma  
University of Greenwich, London, UK

# Contents

<b>Agile Web Development Methodologies: A Survey and Evaluation</b> . . . . .	1
Nasrin Ghasempour Maleki and Raman Ramsin	
<b>Load Experiment of the vDACS Scheme in Case of Increasing the Simultaneous Connection for the DACS SV</b> . . . . .	27
Kazuya Odagiri, Shogo Shimizu and Naohiro Ishii	
<b>Blind Channel Estimation Using Novel Independent Component Analysis with Pulse Shaping for Interference Cancellation</b> . . . . .	45
Renuka Bhandari and Sangeeta Jadhav	
<b>Anticipated Test Design and Its Application to Evaluate and Select Embedded Libraries</b> . . . . .	59
Clairton Siebra, Carla Nascimento, Leonardo Sodre, Antônio Cavalcanti, Daniel Barros, Fernando Lima, Fernando Cruz, Fábio Q.B. da Silva and Andre L.M. Santos	
<b>Improving Web Application Reliability and Testing Using Accurate Usage Models</b> . . . . .	75
Gity Karami and Jeff Tian	
<b>C-PLAD-SM: Extending Component Requirements with Use Cases and State Machines</b> . . . . .	93
Kevin A. Gary and M.B. Blake	
<b>A Structural Rule-Based Approach for Design Patterns Recovery</b> . . . . .	107
Mohammed Ghazi Al-Obeidallah, Miltos Petridis and Stelios Kapetanakis	
<b>DRSS: Distributed RDF SPARQL Streaming</b> . . . . .	125
Amadou Fall Dia, Zakia Kazi-Aoul, Aliou Boly and Elisabeth Métais	



<b>An Efficient Approach for Real-Time Processing of RDSZ-Based Compressed RDF Streams . . . . .</b>	<b>147</b>
Ndéye Bousso Déme, Amadou Fall Dia, Aliou Boly, Zakia Kazi-Aoul and Raja Chiky	
<b>Energy Efficiency Cluster Head Election using Fuzzy Logic Method for Wireless Sensor Networks . . . . .</b>	<b>167</b>
Wided Abidi and Tahar Ezzedine	
<b>Enabling GSD Task Allocation via Cloud-Based Software Processes . . . . .</b>	<b>179</b>
Sami Alajrami, Barbara Gallina and Alexander Romanovsky	
<b>Composite Event Handling over a Distributed Event-Based System . . . . .</b>	<b>193</b>
Amina Chaabane, Salma Bradai, Wassef Louati and Mohamed Jmaiel	
<b>Author Index . . . . .</b>	<b>215</b>

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