

Editors:

Prof. Lotfi A. Zadeh, University of Berkeley, USA

Prof. Janusz Kacprzyk, International Fuzzy Systems Association, POLAND

Prof. Nikos Mastorakis, Technical University of Sofia, BULGARIA

Prof. Angel Kuri-Morales, Instituto Tecnologico Autonomo de Mexico, MEXICO

Prof. Pierre Borne, Ecole Centrale descille, FRANCE

Prof. Leonid Kazovsky, Stanford University, USA

Recent Advances in Software Engineering, Parallel & Distributed Systems

Proceedings of the 9th WSEAS International Conference on Software Engineering, Parallel and Distributed Systems (SEPADS '10)

University of Cambridge, UK, February 20-22, 2010

Electrical and Computer Engineering Series

A Series of Reference Books and Textbooks

ISBN: 978-960-474-156-4

ISSN: 1790-5117



Published by WSEAS Press www.wseas.org



RECENT ADVANCES in SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS

Proceedings of the 9th WSEAS International Conference on SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS (SEPADS '10)

University of Cambridge, UK February 20-22, 2010

ISSN: 1790-5117

ISBN: 978-960-474-156-4

Electrical and Computer Engineering Series A Series of Reference Books and Textbooks

RECENT ADVANCES in SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS

Proceedings of the 9th WSEAS International Conference on SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS (SEPADS '10)

University of Cambridge, UK February 20-22, 2010

Electrical and Computer Engineering Series A Series of Reference Books and Textbooks

Published by WSEAS Press www.wseas.org

Copyright © 2010, by WSEAS Press

All the copyright of the present book belongs to the World Scientific and Engineering Academy and Society Press. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the Editor of World Scientific and Engineering Academy and Society Press.

All papers of the present volume were peer reviewed by two independent reviewers. Acceptance was granted when both reviewers' recommendations were positive.

See also: http://www.worldses.org/review/index.html

ISSN: 1790-5117

ISBN: 978-960-474-156-4



World Scientific and Engineering Academy and Society

RECENT ADVANCES in SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS

Proceedings of the 9th WSEAS International Conference on SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS (SEPADS '10)

University of Cambridge, UK February 20-22, 2010

Editors:

Prof. Lotfi A. Zadeh, University of Berkeley, USA

Prof. Janusz Kacprzyk, International Fuzzy Systems Association, POLAND

Prof. Nikos Mastorakis, Technical University of Sofia, BULGARIA

Prof. Angel Kuri-Morales, Instituto Tecnologico Autonomo de Mexico, MEXICO

Prof. Pierre Borne, Ecole Centrale de Lille, FRANCE

Prof. Leonid Kazovsky, Stanford University, USA

International Program Committee Members:

Cuauhtemoc Rodriguez, UK

Gehan A.J. Amaratunga, UK

Pierre Borne, FRANCE

Bogdan Gabrys, UK

Demterios Kazakos, USA

F.-K. Benra, GERMANY

Dana Simian, ROMANIA

Calin Ciufudean, ROMANIA

Yang Li-Shang, TAIWAN

Urszula Ledzewicz, USA

Ioannis Pountourakis, GREECE

M. Isabel Garcia-Planas, SPAIN

Fathi M. Allan, UAE

Andris Buikis, LATVIA

Akshai Aggarwal, CANADA

Blyden, USA

Octavian Cret, ROMANIA

Valeri Mladenov, BULGARIA

Zoran S. Bojkovic, SERBIA

Nikos C. Tsourveloudis, GREECE

Angel Fernando Kuri Morales, MEXICO

Fumiaki Imado, JAPAN

Ioannis Gonos, GREECE

Irina Zheliazkova, BULGARIA

A. Andreatos, GREECE

G. R.Dattatreya, USA

Preface

This year the 9th WSEAS International Conference on SOFTWARE ENGINEERING, PARALLEL and DISTRIBUTED SYSTEMS (SEPADS '10) was held at the University of Cambridge, UK, February 20-22, 2010. The conference remains faithful to its original idea of providing a platform to discuss software engineering, PDS'architectures, PDS'software, PDS'algorithms and applications, other issues on PDS' and software engineering, algorithms etc. with participants from all over the world, both from academia and from industry.

Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of this conference are published in this Book that will be indexed by ISI. Please, check it: www.worldses.org/indexes as well as in the CD-ROM Proceedings. They will be also available in the E-Library of the WSEAS. The best papers will be also promoted in many Journals for further evaluation.

A Conference such as this can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

Table of Contents

A Model of Aviation Technology Education with Transnational Internet	13
Rong-Jyue Fang, Hua-Lin Tsai, Chi-Jen Lee, Yung-Sheng Chang	
A Model of Instruction with Interactive Whiteboard Learning	20
Rong-Jyue Fang, Hua-Lin Tsai, Chi-Jen Lee, Yung-Sheng Chang	
The Model of Multimedia and Cognitive Learning Theory Rong-Jyue Fang, Yung-Sheng Chang, Chi-Jen Lee, Hua-Lin Tsai	25
A Model of the Personal Digital Assistant Promoting the Teacher's Instructional Innovation Rong-Jyue Fang, Yung-Sheng Chang, Chi-Jen Lee, Hua-Lin Tsai	31
A Model of The D-Learning Way on Science and Technological Course Rong-Jyue Fang, Hua-Lin Tsai, Chi-Jen Lee, Yung-Chen Chang	39
Glaze Calculation Software Based on the Seger Method with Recipe Mixing Utilities, Limit Formulas and Toxicity Measurements	45
Christos Romanosoglou, Theofanis Alexandridis, Maria Tsapoga, Efstathia Papaioannoy, Nikolaos V. Karadimas	
Parallel Multiple Alignment of the Influenza Virus A/H1N1 Genome Sequences on a Heterogeneous Compact Computer Cluster Plamenka Borovska, Ognian Nakov, Veska Gancheva, Ivailo Georgiev	50
A Real Time Application based Java-Based Distributed Object Processing System for IP Telephony G. Vijay Kumar, G. V. Raju	56
Tertiary Buddy System for Efficient Dynamic Memory Allocation Divakar Yadav, A. K. Sharma	61
Software Development and Testing: A System Dynamics Simulation and Modeling Approach Kumar Saurabh	67
Validating Object-Oriented Class Cohesion Metrics Mathematically Jehad Al Dallal	73
The Recursive Network-Based Routing Algorithm Dongmin Choi, Ilyong Chung	78
An Energy-Efficient Clustering for Normal Distributed Sensor Networks Xin Su, Dongmin Choi, Sangman Moh, Ilyong Chung	81
Device-Aware Cache Management based on Adaptive Replacement Young-Jin Kim, Aldhino Anggorosesar	85
A Triple Graph Grammar (TGG) Approach for Mapping UML 2 Activities into Petri Nets Anthony Spiteri Staines	90
A New Framework for the development of AVL based Transport Monitoring System S. Masrom, Siti Z. Z. Abidin, P. N. Hashimah, A. S. Abd. Rahman	96

ISSN: 1790-5117 9 ISBN: 978-960-474-156-4

Model Driven Development for Embedded Systems Kunihihiko Ito, Saeko Matsuura	102
Design and Implementation of Efficient Semi-Synchronous Replication Solution for Disaster Recovery	109
Rekha Singhal, Shreya Bokare, Prasad Pawar	
Software Verification of a Virtual Development Environment for Embedded Software Febiansyah Hidayat, Hadipurnawan Satria, Jin B. Kwon	115
Supporting a Project Leader within an Evolving Product Library Edward Fischer	119
Implicit Domain Decomposition Scheme for Parallel Dynamic Finite Element Geotechnical Analysis Zhao Ben, Goh Siang Huat, Lee Fook Hou	127
Adaptive Refactoring Using a Core-Based Clustering Approach Gabriela Czibula, Istvan Gergely Czibula	133
Use of Finite State Automaton as an attempt to Simplify, Automate and Improve Requirements Engineering Amit Sugandhi	139
Secure Bluetooth Services in an M-Learning Environment Catalin Boja, Lorena Batagan, Mihai Doinea, Alin Zamfiroiu	144
Towards the Reliable Integration Testing: UML-based Scenario Analysis using an Automatic Prototype Generation Tool Shinpei Ogata, Saeko Matsuura	151
An Experience on Introducing a Mobile Community Platform: Flying2U Wong Poh Lee, Mohd Azam Osman, Maziani Sabudin, Shahida Sulaiman	160
Multi-Modal Game Based Learning: Satisfaction and Users Achievement Approach Khaled Ayad, Dimitrios Rigas	166
Efficiency of Multimodal Metaphors in E-learning Platform Mohamed Sallam, Dimitrios Rigas	172
The First Search Right Algorithm for Redundant Reader Elimination in RFID Network Jui-Wen Hung, I-Hui Li, Hsin-Hung Lin, Jyun-An Cai	177
Value Elicitation in Value Based Software Engineering Ghulam Murtaza, Abdul Basit, Naveed Ikram	184
Validation of VRRM Process Model Abdul Basit, Ghulam Murtaza, Naveed Ikram	190
Symmetries Analysis of a MathematicModel with a MACSYMA Program Maria S. Bruzon, Maria L. Gandarias	196
Distributed System for Access Control to Physical Resources based on Qualifications Daniela Cristea, Octavian Prostean, Thomas Muschalik, Ovidiu Tirian	201

ISSN: 1790-5117 10 ISBN: 978-960-474-156-4

ENOD sort on Diamond architecture Masumeh Damrudi, Kamal Jadidy Aval	205
Travelling Wave Solutions for a Generalized Boussinesq Equation by using Free Software Maria Luz Gandarias, Maria Santos Bruzon	209
Multi-Agent Negotiation based Semantic Web Service Composition Models Sandeep Kumar, Nikos E. Mastorakis	214
An Empirical Investigation on Effectiveness of Game Based Learning Dimitrios Rigas, Khaled Ayad	224
Multimodal E-learning on Note-Taking: A User Satisfaction Perspective Dimitrios Rigas, Mohamed Sallam	228
Management Issues in Software Development Mubashir Ahmad, Muhamamd Imran, Abdul Wahab	232
A Study on the Application of Existing Load Balancing Algorithms for Large, Dynamic, Heterogeneous Distributed Systems Rupam Mukhopadhyay, Dibyajyoti Ghosh, Nandini Mukherjee	238
New Challenges in Accounting Applications Software for Developing Double-Input Bookkeeping Brindusa Covaci, Luminita Ionescu, George Lazaroiu	244
Mining the Students' Preferences Regarding e-Learning Environments Ramona Lacurezeanu, Vasile Paul Bresfelean, Robert Buchmann	250
Authors Index	255

Authors Index

Abd. Rahman, A. S.	96	Fang, RJ.	13, 20, 25	Mukhopadhyay, R.	238
Abidin, S. Z. Z.	96	Fang, RJ.	31, 39	Murtaza, G.	184, 190
Ahmad, M.	232	Fischer, E.	119	Muschalik, T.	201
Al Dallal, J.	73	Gancheva, V.	50	Nakov, O.	50
Alexandridis, T.	45	Gandarias, M. L.	196, 209	Ogata, S.	151
Anggorosesar, A.	85	Georgiev, I.	50	Osman, M. A.	160
Aval, K. J.	205	Ghosh, D.	238	Papaioannoy, E.	45
Ayad, K.	166, 224	Hashimah, P. N.	96	Pawar, P.	109
Basit, A.	184, 190	Hidayat, F.	115	Prostean, O.	201
	144	Hou, L. F.	127		56
Batagan, L.	127			Raju, G. V.	
Ben, Z.		Huat, G. S.	127 177	Rigas, D.	166, 172
Boja, C.	144	Hung, JW.		Rigas, D.	224, 228
Bokare, S.	109	Ikram, N.	184, 190	Romanosoglou, C.	45
Borovska, P.	50	Imran, M.	232	Sabudin, M.	160
Bresfelean, V. P.	250	Ionescu, L.	244	Sallam, M.	172, 228
Bruzon, M. S.	196, 209	Ito, K.	102	Satria, H.	115
Buchmann, R.	250	Karadimas, N. V.	45	Saurabh, K.	67
Cai, JA.	177	Kim, YJ.	85	Sharma, A. K.	61
Chang, YC.	39	Kumar, G. V.	56	Singhal, R.	109
Chang, YS.	13, 20	Kumar, S.	214	Staines, A. S.	90
Chang, YS.	25, 31	Kwon, J. B.	115	Su, X.	81
Chi-Jen Lee, CJ.	13, 20, 25	Lacurezeanu, R.	250	Sugandhi, A.	139
Chi-Jen Lee, CJ.	31, 39	Lazaroiu, G.	244	Sulaiman, S.	160
Choi, D.	78, 81	Lee, W. P.	160	Tirian, O.	201
Chung, I.	78, 81	Li, IH.	177	Tsai, HL.	13, 20, 25
Covaci, B.	244	Lin, HH.	177	Tsai, HL.	31, 39
Cristea, D.	201	Masrom, S.	96	Tsapoga, M.	45
Czibula, G.	133	Mastorakis, N. E.	214	Wahab, A.	232
Czibula, I. G.	133	Matsuura, S.	102, 151	Yadav, D.	61
Damrudi, M.	205	Moh, S.	81	Zamfiroiu, A.	144
Doinea, M.	144	Mukherjee, N.	238	·	
		-			