Recent Advances in Telecommunications, Informatics & Educational Technologies

Proceedings of the 13th International Conference on Telecommunications and Informatics (TELE-INFO '14)

Proceedings of the 10th International Conference on Educational Technologies (EDUTE '14)

Istanbul, Turkey, December 15-17, 2014

ISBN: 978-1-61804-262-0
RECENT ADVANCES in
TELECOMMUNICATIONS,
INFORMATICS and EDUCATIONAL
TECHNOLOGIES

Proceedings of the 13th International Conference on Telecommunications and Informatics (TELE-INFO '14)

Proceedings of the 10th International Conference on Educational Technologies (EDUTE '14)

Istanbul, Turkey
December 15-17, 2014

Published by WSEAS Press
www.wseas.org

Copyright © 2014, 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 no less that two independent reviewers. Acceptance was granted when both reviewers’ recommendations were positive.

ISBN: 978-1-61804-262-0
RECENT ADVANCES in
TELECOMMUNICATIONS,
INFORMATICS and EDUCATIONAL
TECHNOLOGIES

Proceedings of the 13th International Conference on Telecommunications and Informatics (TELE-INFO '14)

Proceedings of the 10th International Conference on Educational Technologies (EDUTE '14)

Istanbul, Turkey
December 15-17, 2014
Preface
This year the 13th International Conference on Telecommunications and Informatics (TELEINFO '14) and the 10th International Conference on Educational Technologies (EDUTE '14) were held in Istanbul, Turkey, December 15-17, 2014. The conferences provided a platform to discuss telecommunications, informatics, advanced educational software and hardware, corporate training, digital libraries and education, educational networks, human-computer interfaces, mobile education, post-university education and training etc. with participants from all over the world, both from academia and from industry.

Their 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 these conferences are published in this Book that will be sent to international indexes. They will be also available in the E-Library of the WSEAS. Extended versions of the best papers will be promoted to many Journals for further evaluation.

Conferences such as these 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

- **Time Modulation through Variable Pulse Amplitude in 4D Arrays**  
  Ertugrul Aksoy  
  (Page 12)

- **Knowledge Management and Collaboration – Analysis of the Siemens Healthcare Consulting Group**  
  Eva Gattnar, Jens Schneider, Brigitte Stroetmann, Okan Ekinci  
  (Page 22)

- **FPGA-Based Real-Time Implementation of AES Algorithm for Video Encryption**  
  Sonia Kotel, Medien Zeghid, Adel Baganne, Taoufik Saidani, Yousef Ibrahim Daradkeh, Tourki Rached  
  (Page 27)

- **Using e-Activities in Pre University Education for Working Specific and Transversal Competences**  
  Javier Bilbao, Concepción Varela, Eugenio Bravo, Miguel Rodriguez, Olatz García, Purificación González  
  (Page 37)

- **Attendance Monitoring as a Context-Aware Service**  
  Alexander Samochad, Dimitri Timofeev, Dmitry Raychuk, Igor Khmelkov  
  (Page 44)

- **Correlation Hamming Distance Power Analysis of 16-bit Integer Multiplier in FPGA**  
  Marek Repka, Jozef Tomecek, Michal Varchola  
  (Page 49)

- **Students’ Views on the Use of e-Portfolios and Support Given to Promote Their Computer Learning for Educational Purposes**  
  Fariza Khalid  
  (Page 54)

- **Uses of Linguistic Representation Model Info 2-tuples with Information Multigranular**  
  Zapata C. Santiago, Fuentealba O. David, Valenzuela G. Gaspar  
  (Page 60)

- **System for Remote Complex Network Data Visualization Using Streaming Graphs and WebSockets**  
  Jakub Janostık, Radomir Sohlich, Frantisek Spacek  
  (Page 69)

- **The Role of Information Culture in Common Culture**  
  Rasim Alguliyev, Rasmiiyya Mahmudova  
  (Page 72)

- **Academics Entrepreneurial Orientation and Research Commercialization: Role of Technology Transfer Office**  
  Wirya Najm Rashid, Kamariah Ismail  
  (Page 81)

- **Cryptoprocessor with Native Resistance against Side Channel and Fault Injection Attacks**  
  Lubos Gaspar, Marek Repka, Houssem Maghrebi, Jean-Luc Danger, Viktor Fischer  
  (Page 88)

- **Tunable Perfect Metamaterial Absorber Design Using the Golden Ratio and Energy Harvesting Application**  
  Emin Unal, Furkan Dincer, Erkan Tetik, Muharrem Karaaslan, Cumali Sabah  
  (Page 98)
Centralized Logging System Based on WebSockets Protocol
Radomír Sohlíč, Jakub Janostík, Frantisek Spacek

Model-Driven Software Configuration Management and Semantic Web in Applied Software Development
Arturs Bartusevics, Andrejs Lesovskis, Leonids Novickis

Evaluation of Security Factors Effecting on Web-Based Service Adoption
Hamed Taherdoost, Shamsul Sahibuddin, Neda Jalaliyoon

Leakage Measurement Tool of McEliece PKC Calculator
Marek Repka

An efficient Encryption Scheme Based on Block Cipher Algorithms
Fatma Sbiaa, Medien Zeghid, Adel Baganne, Yousef Ibrahim Daradkeh, Rached Tourki

Issues in Developing UML Diagrams from Natural Language Text
Nakul Sharma, Prasanth Yalla

Policy Driven Initiator in Coordination Checkpointing Strategies
Bakhta Meroufel, Ghalem Belalem

Knowledge Management in Higher Education
Elissaveta Gourova, Lilia Zografova

Helper-Based Interactive Programming Education Model
Yongju Kim, Hyunwoo Jung

An Effective Usage of Education and Learning as a Service (ELaaS) in Cloud Computing
K. Saravanan

On the Performance of the Sum-of-Sinusoids Simulation Models for Rayleigh Fading Channels
Mohamed Ali Skima, Amira Boulaaba, Hamadi Ghariani

Comparative Study on AES Hardware Implementations
Nicolcioiu Andreea, Patriciu Victor, Mărgărit Laurențiu, Kovacs Andrei

Optimization Query Process of Mediators Using Data Mining Approach
Messaouda Fareh

Preparation and Training of People to the Profession in Challenging Conditions
David Ullrich, Eva Ambrozová, Jiří Koleňák, Ladislav Sieger

Swarm based Energy Aware Mitigation Mechanism for Root Node Attacks in MANETs
S. Parthiban, Paul Rodrigues

Distributed Reversal Cache Technique to Improve Distributed Virtual Memory
Ahmad Al-Khasawneh, Sa’ed Abed
Structure of Email Discourse in a Selected Iranian Organization
Mitra Madanchian, Hamed Taherdoost

Evaluation of Student Performance in a Collaborative Problem Solving Environment Using Social Network Media
Abdalla Radwan

Geometric Feature Extraction from Urdu Ligatures
Naila Khan, Awais Adnan, Sadia Basar

Creating an Effective Pathways for Mobile Advertising in Tertiary Education
Mohd Nazri Mohd Noor, Syed Mazlan Syed Mat Dom

MAC Layer Protocols for Linear Wireless Sensor Networks: A Survey
Radosveta Sokullu, Eren Demir

Color Image Segmentation Using K-Means Classification on RGB Histogram
Sadia Basar, Awais Adnan, Naila Habib Khan, Shahab Haider

Joint Energy Efficient Routing Algorithm (JEER) to Reduce Link Break Issues, Load balancing and Improving Life Time of MANET Using Cross Layer System
R. Rajeshkanna, A. Saradha

Image Encryption Using Development of Chaotic Logistic Map Based on Feedback Stream Cipher
Hossam Eldin H. Ahmed, Ayman H. Abd El-aziem

Authors Index
### Authors Index

<table>
<thead>
<tr>
<th>Authors</th>
<th>Pages</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abd El-Aziem, A. H.</td>
<td>274</td>
<td>Ismail, K.</td>
<td>81</td>
</tr>
<tr>
<td>Abed, S.</td>
<td>208</td>
<td>Sabah, C.</td>
<td>98</td>
</tr>
<tr>
<td>Adnan, A.</td>
<td>229, 257</td>
<td>Sahibuddin, S.</td>
<td>117</td>
</tr>
<tr>
<td>Ahmed, H. E. H.</td>
<td>274</td>
<td>Saidani, T.</td>
<td>27</td>
</tr>
<tr>
<td>Aksoy, E.</td>
<td>12</td>
<td>Samochadin, A.</td>
<td>44</td>
</tr>
<tr>
<td>Alguliyev, R.</td>
<td>72</td>
<td>Santiago, Z. C.</td>
<td>60</td>
</tr>
<tr>
<td>Al-Khasawneh, A.</td>
<td>208</td>
<td>Saradha, A.</td>
<td>263</td>
</tr>
<tr>
<td>Ambrozová, E.</td>
<td>192</td>
<td>Saravanan, K.</td>
<td>165</td>
</tr>
<tr>
<td>Baganne, A.</td>
<td>27, 133</td>
<td>Khmelkov, I.</td>
<td>44</td>
</tr>
<tr>
<td>Bartusevics, A.</td>
<td>108</td>
<td>Schneider, J.</td>
<td>22</td>
</tr>
<tr>
<td>Basar, S.</td>
<td>229, 257</td>
<td>Koleňák, J.</td>
<td>192</td>
</tr>
<tr>
<td>Belalem, G.</td>
<td>146</td>
<td>Sieger, L.</td>
<td>192</td>
</tr>
<tr>
<td>Bilbao, J.</td>
<td>37</td>
<td>Skima, M. A.</td>
<td>172</td>
</tr>
<tr>
<td>Boulaaba, A.</td>
<td>172</td>
<td>Sohlich, R.</td>
<td>69, 103</td>
</tr>
<tr>
<td>Bravo, E.</td>
<td>37</td>
<td>Sokullu, R.</td>
<td>247</td>
</tr>
<tr>
<td>Danger, J.-L.</td>
<td>88</td>
<td>Spacek, F.</td>
<td>69, 103</td>
</tr>
<tr>
<td>Daradkeh, Y. I.</td>
<td>27, 133</td>
<td>Maghrebi, H.</td>
<td>88</td>
</tr>
<tr>
<td>Demir, E.</td>
<td>247</td>
<td>Stroetmann, B.</td>
<td>22</td>
</tr>
<tr>
<td>Dincer, F.</td>
<td>98</td>
<td>Syed Mat Dom, S. M.</td>
<td>237</td>
</tr>
<tr>
<td>Ekinci, O.</td>
<td>22</td>
<td>Taherdooost, H.</td>
<td>117, 215</td>
</tr>
<tr>
<td>Fareh, M.</td>
<td>184</td>
<td>Tetik, E.</td>
<td>98</td>
</tr>
<tr>
<td>Fischer, V.</td>
<td>88</td>
<td>Timofeev, D.</td>
<td>44</td>
</tr>
<tr>
<td>Fuentesalba, O. D.</td>
<td>60</td>
<td>Tomecek, J.</td>
<td>49</td>
</tr>
<tr>
<td>García, O.</td>
<td>37</td>
<td>Tourki, R.</td>
<td>133</td>
</tr>
<tr>
<td>Gaspar, L.</td>
<td>88</td>
<td>Ullrich, D.</td>
<td>192</td>
</tr>
<tr>
<td>Gaspar, V. G.</td>
<td>60</td>
<td>Unal, E.</td>
<td>98</td>
</tr>
<tr>
<td>Gattnar, E.</td>
<td>22</td>
<td>Varchola, M.</td>
<td>49</td>
</tr>
<tr>
<td>Ghariani, H.</td>
<td>172</td>
<td>Varela, C.</td>
<td>37</td>
</tr>
<tr>
<td>González, P.</td>
<td>37</td>
<td>Yalla, P.</td>
<td>139</td>
</tr>
<tr>
<td>Gourova, E.</td>
<td>154</td>
<td>Zeghid, M.</td>
<td>27, 133</td>
</tr>
<tr>
<td>Haider, S.</td>
<td>257</td>
<td>Zografova, L.</td>
<td>154</td>
</tr>
</tbody>
</table>

Recent Advances In Telecommunications, Informatics And Educational Technologies

ISBN: 978-1-61804-262-0

284