

# **2013 International Conference on Adaptive Science and Technology (ICAST 2013)**

**Pretoria, South Africa  
25-27 November 2013**



**IEEE Catalog Number: CFP1392F-POD  
ISBN: 978-1-4799-3068-5**

## Full Papers

1. Semi-Supervised Local Feature Extraction of Hyperspectral Images over Urban Areas "3  
Hannah Adebanjo, Jules Tapamo
2. Animal Identification Based on Footprint Recognition "8  
Mohammed Alli, Serestina Viriri
3. Gender Classification using Face Recognition"32  
Terishka Bissoon, Serestina Viriri
4. Supporting Rural Teachers 21<sup>st</sup> Century Skills Development Through Mobile  
Technology Use: A Case in Cofimvaba, Eastern Cape, South Africa "36  
Adele Botha, Marlien Herselman
5. The Relative Permittivity of the Dielectric Composite with a Small Doping of  
Conductive Nanoparticles "43  
Victor Chetverikov
6. Topic Modelling in the Information Warfare Domain"46  
Alta de Waal, Francois Mouton
7. The Case for Cyber Counter Intelligence "53  
Petrus Duvenage, Sebastiaan von Solms
8. Identifying Vehicle Descriptions in Microblogging Text with the Aim of Reducing or  
Predicting Crime "5;  
Coral Featherstone
9. Utilizing Cognitive Work Analysis for the Design and Evaluation of Command and  
Control User Interfaces"69  
Eugene Gous
10. A Novel Cryptographic Encryption Technique of Video Images using Quantum  
Cryptography for Satellite Communications"76  
Quist-Aphetsi Kester, Laurent Nana, Anca Christine Pascu
11. A New Hybrid Asymmetric Key-Exchange and Visual Cryptographic Algorithm for  
Securing Digital Images "82  
Quist-Aphetsi Kester, Laurent Nana, Anca Christine Pascu

12. The Roles and Needs of Community Health Workers in Developing Countries: An Exploratory Case Study in South Africa "87  
Gugu Khalala, Ishmael Makitla, Adele Botha, Ronell Alberts
13. Software Quality Assurance in Scrum: The Need for Concrete Guidance on SQA strategies in meeting user expectations "92  
Tiisetso Khalane, Maureen Tanner
14. Towards a Channel-Agnostic Mobile Transaction Platform to Support Drug Adherence within a Resource Constrained Environment "98  
Mischa Koedderitzsch, Adele Botha, Marlien Herselman, Alfred Coleman
15. A Focussed Dynamic Path Finding Algorithm with Constraints "": 3  
Louise Leenen, Alex Terlunen
16. Guiding Principles for Adopting and Promoting Enterprise 2.0 Collaboration Technologies""; ;  
Robert Louw, Jabu Mtsweni
17. A Critical Review of ICT Skills for Higher Education Learners""; 7  
Daleen Maneschijn, Adele Botha, Judy van Biljon
18. The Design of Accessible and Usable Mobile Services for Low Literate Users ""32:  
Muzi Matyila, Adele Botha, George Sibiyi, Ronell Alberts
19. Detecting a Malicious Insider in the Cloud Environment Using Sequential Rule Mining ""336  
Lucky Nkosi, Paul Tarwireyi, Matthew O Adigun
20. Unicorn: A Unified Communication Solution for Marginalized Communities ""346  
Okelitsi Nyathi, Alfredo Terzoli, Mosiuoa Tsietsi
21. Comparison of Routing Protocols Using Wireless Mesh Network Simulation and Testbed ""352  
Olukayode Oki, Pragasen Mudali, Matthew Adigun, John Oladosu
22. An Analysis Methodology for Impact of New Technology in Complex Sociotechnical Systems. ""359  
Rudolph Oosthuizen, Leon Pretorius

23. Developing a Virtualized Testbed Environment in Preparation for Testing Network Based Attacks "365  
Renier Pelser van Heerden, Heloise Pieterse, Ivan Daniel Burke, Barry Irwin
24. Automated Classification of Computer Network Attacks "373  
Renier Pelser van Heerden, Louise Leenen, Barry Irwin
25. Characterization of Medical Images using Edge Density "37:  
Nevesh Rajaram, Serestina Viriri
26. Dynamic Composition of Portal Interface for GUISET Service "387  
Siyasanga Sihawu, Matthew Adigun, John Oladosu, Sibusiso Xulu, Edgar Jembere
27. Green Cloud Architecture for African Local Collectivities"396  
Soidridine Moussa Moindze, Kora Ahmed Dooguy, Lishou Claude
28. The Design and Implementation of a Network Simulation Platform "3: 3  
Sune von Solms, Schalk W Peach

#### Short Papers

1. Cloud-Based Security Mechanisms for Critical Information Infrastructure Protection"3: ;  
Brett van Niekerk, Pierre Jacobs
2. Critical Information Infrastructure Protection: How Comprehensive Should It Be? "3; 5  
Basie von Solms

#### Posters

1. Service Desk link into IT Asset Disposal: A case of a discarded IT Asset "3; 9  
A. Kayode Adesemowo, Kerry-Lynn Thompson
2. A Quality of Service Aware Multi-Level Strategy for Selection of Optimal Web Service "423  
A.O Akingbesote, M.O Adigun, J.B Olasosu, E. Jembere
3. Prioritizing students' mobile centric information access needs: A case of Postgraduate students "428  
Baldreck Chipangura, Judy van Biljon, Adele Botha

4. Statistical Analysis of Outage Time of Commercial Telecommunication Networks in Ghana"<sup>435</sup>  
Francis Kwabena Oduro-Gyimah, Julius Quarshie Azasoo, Kwame Osei Boateng
5. Integrating Explicit Problem-Solving Teaching Into ActiveMath, an Intelligent Tutoring System "<sup>443</sup>  
Diana Pholo, Seleman Ngwira
6. The e-Judiciary System: Obliteration of the Digital Divide through ICT4D in Traditional Justice Systems"<sup>44</sup>;  
Mfundo Shakes Scott, Mamello Thinyane
7. A Framework for Provisioning RESTful Services on Mobile Devices "<sup>459</sup>  
Charl van der Westhuizen, Marijke Coetzee