

**South African Institute of  
Computer Scientists and  
Information Technologists  
Annual Research Conference 2009**

**(SAICSIT 2009)**

**ACM International Conference Proceedings Series**

**Vanderbijlpark, Emfuleni, South Africa  
12-14 October 2009**

**Editors:**

**Jason Cohen**

**Scott Hazelhurst**

**ISBN: 978-1-61738-048-8**

# Contents

## Welcome

## Programme and Organising Committees

<b>I Invited Lectures</b>	<b>1</b>
<i>Team software process: recent successes and technical advances</i>	
Phillip Miller . . . . .	3
<i>From Behind To Ahead ICT4D as an Agent of Change for the Computer Science Curriculum</i>	
Erkki Sutinen . . . . .	4
<b>II Full research papers</b>	<b>5</b>
<i>Design Notations for Creating Virtual Environments</i>	
Charlene Elliott, Gary Marsden, Marion Walton, Edwin Blake . . . . .	7-15
<i>Methodological Challenges in e-Skills Shortage Research in South Africa</i>	
Patricia Alexander, Hugo Lotriet, Machdel Mathee . . . . .	16-21
<i>Composite Refactoring Using Fine-Grained Transformations</i>	
Emmad Saadeh and Derrick G. Kourie . . . . .	22-29
<i>A Lightweight Methodology to Improve Web Accessibility</i>	
Mardé Greeff and Paula Kotzé . . . . .	30-39
<i>Molecular Modelling of Calcium Dependent Protein Kinase 4 (CDPK4) from Plasmodium falciparum</i>	
Tsepo Tsekoa . . . . .	40-43
<i>Evaluating text preprocessing to improve compression on maillogs</i>	
Fred Otten, Barry Irwin, Hannah Thinyane . . . . .	44-53
<i>A hybrid neural network and minimax algorithm for zero-sum games</i>	
Mathys C. du Plessis . . . . .	54-59
<i>An Evaluation of Techniques for Image Searching and Browsing on Mobile Devices</i>	
Dynal Patel, Gary Marsden, Matt Jones, Steve Jones . . . . .	60-69
<i>A Framework and Methodology for Knowledge Management System Implementation</i>	
Hanlie Smuts, Alta van der Merwe, Marianne Looock, Paula Kotzé . . . . .	70-79
<i>Mobile Phone Performance Analysis for Camera Based Visual Interactions</i>	
Simon Kerr, Hannah Thinyane, Greg Foster . . . . .	80-86
<i>Evaluation Criteria for Assessing the Usability of ERP Systems</i>	
Akash Singh, Janet Wesson . . . . .	87-95
<i>Glaserian and Straussian Grounded Theory: Similar or Completely Different</i>	
Johanna van Niekerk, J. Dewald Rhoode . . . . .	96-103
<i>Context-Aware Handoff Decision for Wireless Access Networks using Bayesian Networks</i>	
Lekometsa Mokhesi, Antoine Bagula . . . . .	104-111
<i>The Adoption of Open Source Software in Business Models: A Red Hat and IBM Case Study</i>	
Neeshal Munga, Thomas Fogwill, Quentin Williams . . . . .	112-121
<i>Usability evaluation methods: Mind the gaps</i>	
Estelle de Kock, Judy van Biljon, Marco Pretorius . . . . .	122-131

<i>Exploring the African Village Metaphor for Computer User Interface Icons</i> Delene Heukelman, Seraphin Eyono Obono . . . . .	132-140
<i>Plagiarising of Source Code by Novice Programmers a "Cry for Help"?</i> Dieter Vogts . . . . .	141-149
<i>The influence of optimisations on the performance of an object relational mapping tool</i> Pieter van Zyl, Derrick G. Kourie, Louis Coetzee, Andrew Boake . . . . .	150-159
<i>GPU Packet Classification using OpenCL: A Consideration of Viable Classification Methods</i> Alastair Nottingham and Barry Irwin . . . . .	160-169
<i>Towards an Artificial Neural Network-based Simulator for Behavioural Evolution in Evolutionary Robotics</i> Christiaan Pretorius, Mathys C. du Plessis, Charmain Cilliers . . . . .	170-178
<i>An analysis of the international discourse about women in Information Technology</i> Henk Pretorius, Carina de Villiers . . . . .	179-186
<i>The Revised Developmental Approach to the Uncapacitated Examination Timetabling Problem</i> Nelishia Pillay . . . . .	187-192
<i>Assessing Alignment of an E-Government Project in the Context of a Developing Country: A Heideggerian Perspective</i> Nixon Muganda . . . . .	193-202

### **III Posters 203**

<i>Towards Database Inference by GUI Analysis Authors</i> Meredith A. Barnes, Mathys C. du Plessis and Brenda Scholtz . . . . .	205
<i>Case Study: Social Media as a form of SEO</i> Minnaar Pieters . . . . .	205
<i>Groupware and Virtual Organisations, the way forward for Small and Medium Enterprises (SMEs) in Third world countries amidst global financial challenges</i> Nchimunya Chaamwe and Mike Mwale . . . . .	205
<i>Towards flexible engineering of intelligent semantic-based services: building blocks and methodology</i> Jabu Mtsweni, Elmarie Biermann, Ernest Ketcha Ngassam . . . . .	206
<i>A Panoramic Video System</i> Imran Achmed, James Connan . . . . .	206
<i>Using ICTs to become a competitive SME in South Africa</i> Lloyd Modimogale and Jan H Kroeze . . . . .	207
<i>The use of the robots exclusion protocol on the za domain</i> M.V. Gwetu . . . . .	207
<i>Performance of Implicit Error Correction of Networks using Random Network Coding</i> S von Solms, ASJ Helberg . . . . .	208
<i>A framework for intelligent speech-based self-care health information and disease diagnosis systems</i> Olufemi Moses Oyelami . . . . .	209
<i>Towards A Consumer-Initiated SLA Template creation Framework for Grid-based Service Environments</i> Tarirai Chani, Johnson Iyilade, Bethel Mutanga, Mathew Adigun, S. Kabanda . . . . .	209
<i>Multi-touch technology</i> Kgatlhego Moemedi, James Connan . . . . .	210

### **IV Indices**

#### **Author Index**

#### **Topic Index**