Annual Conference of the
South African Institute of
Computer Scientists and
Information Technologists

SAICSIT 2011

*Knowledge, Innovation and Leadership in a
Diverse, Multidisciplinary Environment*

Programme

*The Pavilion Conference Centre
Cape Town, South Africa
3-5 October 2011*

MONDAY 3 OCTOBER 2011	
08:30	Masters and Doctoral Symposium
15:00	Early Registration
17:30	Cocktail reception

TUESDAY 4 OCTOBER 2011		
09:00	Welcome, Irwin Brown, *Pavilion*	
09:15	Keynote Address: Danny Naidoo (Global Head of Innovation, Old Mutual Group), *Pavilion*	
10:15	Track 1, *Pavilion*, Chair: Gruner	Track 2, *5+7*, Chair: Bankole	Track 3, *Millenium*, Chair: Keet
	Towards a framework for the adoption of Business Intelligence in public sector organisations: the case of South Africa; Kaashief Hartley and Lisa Seymour Business Process Management Adoption: A Case Study of a South African Supermarket Retailer; Lisa F Seymour and Wesley Grisdale	The Influence of Gender and Age on Choosing Computing Courses at South African Universities; Patricia Alexander, Marthie Schoeman, Estelle De Kock, Bennett Alexander and Roxi Piderit Investigating the Extent to which Students Share Tacit Knowledge Using Mobile Phones in Group Projects; Chiedza Khumbula and Michael Kyobe	Evaluating Web Conferencing Tool Effectiveness; Andrew Twine and Irwin Brown Using Information Visualization to Support Web Service Discovery; Simone Beets and Janet Wesson
11:15	**Tea/Coffee**	
11:30	Track 1, *Pavilion*, Chair: Hart	Track 2, *5+7*, Chair: von Solms	Track 3, *Millenium*, Chair: Kourie
	Barrel Menu: A New Mobile Phone Menu for Feature Rich Devices; Greg Foster and Terence Foxcroft The conversion from PowerPoint (PPT) to compressed Scalable Vector Graphics (SVGZ); Jean-Pierre Joubert, Jean Greyling and Charmain Cilliers The Impact of Sensor Fusion on Tilt Interaction in a Mobile Map-Based Application;Bradley van Tonder and Janet Wesson	Static Typing with Value Space-based Subtyping; Alexander Paar and Stefan Gruner Providing Media Download Services in African Taxis; Graeme Smith and Gary Marsden Indexing and Weighting of Multilingual and Mixed Documents;Mohammed Mustafa, Izzedin Osman and Hussein Suleman	Panel Discussion: What industry wants from academic research Panelists: 　Paulo Ferreira, Samsung 　Jenny McKinnell, CITI 　Judith Bishop, Microsoft Research 　Gert-Jan van Rooyen, University of Stellenbosch
13:00	**Lunch**	
14:00	Track 1, *Pavilion*, Chair: Seymour	Track 2, *5+7*, Chair: van Niekerk	Track 3, *Millenium*, Chair: van der Poll
14:00	Contextual Factors Influencing Strategic Information Systems Plan Implementation; Nancy Brown and Irwin Brown Successful ICT Service Delivery: Enablers, Inhibitors and Hygiene Factors - A Service Provider Perspective; Eureka Sewchurran and Irwin Brown	Issues of Adoption: Have E-Learning Management Systems Fulfilled their Potential in Developing Countries?; Grace Ssekakubo, Hussein Suleman and Gary Marsden The Effect of Construction Heuristics on the Performance of a Genetic Algorithm for the School Timetabling Problem; Rushil Raghavjee and Nelishia Pillay	Evaluating Software Specifications by Comparison; Cyrille Dongmo and John Andrew van der Poll Rough Subsumption Reasoning with rOWL; Maria Keet
15:00	Keynote Address: Nikolai Tillmann (Principal Research Software Development Engineer, Microsoft Research) *Future of Software Engineering on Mobile Devices, Pavilion*	
16:00	**Tea/Coffee**	
16:15	**SAICSIT AGM, *Pavilion***	
18:00	**Conference Banquet**	

WEDNESDAY 5 OCTOBER 2011		
09:00	Keynote Address: Kweku-Muata Osei-Bryson (Virginia Commonweath University) *So that We may Feed from Our Own Gardens: Research Agendas for Development, Pavilion*	
10:00	Track 1, *Pavilion*, Chair: Leonard	Track 2, *5+7*, Chair: Kekwaletswe	Track 3, *Millenium*, Chair: Singh
	Does Chomsky Complexity Affect Genetic Programming Computational Requirements?; Clayton Burger and Mathys Cornelius du Plessis The Influence of Gender and Internet Experience on the Acceptability of Smell as Interaction Modality; Ray Shih and Pieter Blignaut	Activity analysis of a knowledge management system - Raymond Kekwaletswe The Dualism of the Information Technology Project in organisations;Motshidisi Letseka Domain Specific Languages Contextualized;Michael Hendrik Matthee and Stephen Levitt Towards the Formalisation of Object-Oriented Methodologies;Ayodele Adeola Adesina-Ojo, John Andrew van der Poll and Lucas M. Venter	Enhancing Identification Mechanisms in UML Class Diagrams with Meaningful Keys;C. Maria Keet Design Principles for Contactile Computing;Philip Machanick A Phonetic Approach to Handling Spelling Variations in Medieval Documents;Mushtaq Ahmad, Nazim Rahman and Stefan Gruner An evaluation of a low-cost 3-dimensional gestural interface: Wii3D;João Lourenço and Hannah Thinyane
11:00	**Tea/Coffee**	
11:15	Track 1, *Pavilion*, Chair: Jansen van Vuuren	Track 2, *5+7*, Chair: Kroeze	Track 3, *Millenium*, Chair: Calitz

	Panel Discussion:
	Is the raising of cyber security awareness amongst citizens an integral part of Cyberwarfare or only a national imperative to protect the citizen from economic or other losses?
	
	Panelists:
	    Jackie Phahlamohlaka (CSIR, South Africa)
	    Marthie Grobler (CSIR, South Africa)
	    Zama Dlamini (CSIR, South Africa)
	    Rossouw von Solms (Nelson Mandela Metropolitan University, South Africa)
	    Brig Gen L. Yam (University of Stellenbosch)
	    Jannie Zaaiman (University of Venda)
		A Grounded Theory Research Investigation Into The Importance Of Social Relationships And Networks Within Corporate Information Systems Projects;Awie Leonard
		Engineering RESTful semantic services on the fly;Jabu Mtsweni, Elmarie Biermann and Laurette Pretorius
		Detecting Non-Stereoscopic to Stereoscopic Image Splicing with the use of Disparity Maps;Mark-Anthony Fouché and Martin Olivier
		Understanding Culturally Distant End-Users Through Intermediary-Derived Personas;Fritz Meissner and Edwin Blake
		Using mass video notification methods to assist Deaf people;Ryno Taswald Lioyd Hoorn and Isabella Venter
		Investigation into BATMANd-0.3.2 Protocol Performance in an Indoor Mesh Potato Testbed;Edmundo Chissungo, Edwin Blake and Hanh Le
			A Phonetic Approach to Handling Spelling Variations in Medieval Documents;Mushtaq Ahmad, Nazim Rahman and Stefan Gruner
			An evaluation of a low-cost 3-dimensional gestural interface: Wii3D;João Lourenço and Hannah Thinyane
			Mobile Phones and Digital Divide in East African Countries;Lucas Mimbi, Michael Kyobe and Felix Bankole
			Empowerment of rural farmers through information sharing using inexpensive technologies;Marie Louise Iraba and Isabella
			Adoption of Green IS in South Africa – an exploratory study;Chris Petzer, Carolyn Jane Dunton McGibbon and Irwin Brown
			The RHINO Platform – Charging Towards Innovation and Skills Development in Software Defined Radio;Simon Winberg, Alan Langman and Simon Scott
			Empirical comparison of four classifier fusion strategies for positive-versus-negative ensembles;Patricia E.N. Lutu
			Proposed Stages of a Rural ICT Comprehensive Evaluation Framework in ICT for Rural Development Projects;Caroline Pade-Khene and David Sewry

12:45	**Lunch**	
13:45	Track 1, *Pavilion*, Chair: McGibbon	Track 2, *5+7*, Chair: TBA	Track 3, *Millenium*, Chair: Lutu
	Day Labour Mobile Electronic Data Capture and Browsing System; Christopher Chepken, Edwin Blake and Gary Marsden Efficiency Measurements in IVR Systems for Oral Users: Consequences of Differences in Educational Levels; Tembalethu Jama Ndwe, Etienne Barnard, Renee Koen and Bryan McAlister Browser-based Software for Technology Transfer; Judith Bishop	Using N-grams to Identify Mathematical Topcis in MXit Lingo;Laurie Butgereit and Reinhardt A Botha A Sketch-Based Articulated Figure Animation Tool; Timothy Matthews and Dieter Vogts	ICT Career Track Awareness amongst ICT Graduates;Andre Calitz, Jean Greyling and Margaret Cullen A Domain-Specific Language for URDAD Based Requirements Elicitation;Fritz Solms, Craig Edwards, Alexander Paar and Stefan Gruner The Accreditation of ICT Degree Programs in South Africa;Andre Calitz, Jean Greyling and Margaret Cullen
15:15	**Conference Closing and Plenary Session, *Pavilion***	

Programme Committee

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Shaun Bangay, Rhodes University
Lynette Barnard, Nelson Mandela Metropolitan University
Sonia Berman, University of Cape Town
Regina Bernhaupt, Université Toulouse III
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Stephen Levitt, University of the Witwatersrand
Hugo Lotriet, University of Pretoria
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Audrey Mbogho, University of Cape Town
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Karen Renaud, University of Glasgow
Ingrid Rewitzky, Stellenbosch University
Anthony Rodrigues, Bondo University College, Kenya
Ian Sanders, University of the Witwatersrand
Kosheek Sewchurran, University of Cape Town
Farid Shirazi, Ryerson University, Canada
Paula Alexandra Silva, Lancaster University, United Kingdom
Daniel Sinnig, Concordia University, Canada
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Hussein Suleman, University of Cape Town
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McDonald van der Merwe, University of South Africa
Etienne van der Poel, University of South Africa
Andre van der Poll, University of South Africa
Darelle van Greunen, Nelson Mandela Metropolitan University
Rossouw van Solms, Nelson Mandela Metropolitan University
Terence van Zyl, Council for Scientific and Industrial Research, Meraka Institute
Hein Venter, University of Pretoria
Lucas Venter, North-West University
Isabella Venter, University of the Western Cape
Herna Viktor, University of Ottawa
Janet Wesson, Nelson Mandela Metropolitan University
Quentin Williams, Council for Scientific and Industrial Research, Meraka Institute

Panel Discussion Abstracts

Panel Discussion:
What industry wants from academic research

Panelists:
  Derrick Kourie, University of Pretoria [Panel Chair]
  Paulo Ferreira, Samsung
  Jenny McKinnell, CITI
  Judith Bishop, Microsoft Research
  Gert-Jan van Rooyen, University of Stellenbosch

Abstract:
In many countries, and South Africa is no exception, there are examples of industry and academia working together more closely than in the past. Examples in SA are the SAP Research Centre and the recent Samsung Mobile Innovation Lab at UCT. Unlike previous discussions, which have focused on the output quality of graduates and the nature of the curriculum, this panel will explore what it is that industry hopes to get from research connections and how it hopes to achieve its goals and leverage the results.

Panel Discussion:
Is the raising of cyber security awareness amongst citizens an integral part of Cyberwarfare or only a national imperative to protect the citizen from economic or other losses?

Panelists:
  Joey Jansen Van Vuuren (CSIR, South Africa) [Panel Chair]
  Jackie Phahlamohlaka (CSIR, South Africa)
  Marthie Grobler (CSIR, South Africa)
  Zama Dlamini (CSIR, South Africa)
  Rossouw von Solms (Nelson Mandela Metropolitan University, South Africa)
  Brig Gen L. Yam (University of Stellenbosch)
  Jannie Zaaiman (University of Venda)

Abstract:
Cyberwarfare refers to politically motivated hacking to conduct sabotage and espionage. Cyberwarfare has been defined by government security expert Richard A. Clarke, in his book Cyber War (May 2010), as "actions by a nation-state to penetrate another nation's computers or networks for the purposes of causing damage or disruption."[4]. But what about actions by informed citizens with malicious intent, or actions by third parties using cyber resources of unsuspecting users? How will the actions of a nation-state in cyberspace be distinguished from the actions of Individual citizens?

With the importance that information plays in the everyday environment, cyber security plays a key role in the maintenance of national security; which is defined as that part of government policy which has as its objectives the protection of a nation's vital national interests against existing or potential adversaries. In this regard, cyber security refers to the protection of information and information systems from unauthorised access, use, disclosure, disruption, modification or destruction.

Daved, CISSP of Naval Warfare Command, indicates that recent activities in cyberspace have moved the battlefield to the average citizen's home as it was observed that attackers can take over and compromise a brand new computer in 30 seconds after connecting to the internet [1]. Compromised PC's of unsuspecting citizens could be used for launching cyber warfare type attacks on the rest of the world. This in turn could pose a national security threat to any nation. The exponential increase in Internet broadband access in RSA and the rest of Africa could result in an increase in security threats that will also take the battlefield to the home of the average citizen in rural South Africa, and indeed to the home of any average African citizen. It is important therefore that citizens are made aware of the multiplicity of threats associated with their cyberspace citizenship. Against this background the question arises whether the raising of cyber security awareness amongst citizens is an integral part of Cyber warfare or only a national imperative to protect the citizen from economic or other losses.

Modern society created both a direct and indirect dependence on information technology, with a strong reliance on immediacy, access and connections [3]. This, combined with the fact that there is a large portion of the South African population that has not had regular and sustained exposure to technology and broadband internet access, expose local communities to cyber threats.

Presently the low broadband penetration in Africa limits the chances of Africa being used to launch cyber attacks to other countries. However, the current increase in broadband access throughout Africa may potentially increase the cyber related vulnerabilities drastically. As a result, a compromise of the integrity, confidentiality, authenticity or availability of the technological systems could have dramatic consequences regardless of whether it is a temporary interruption of connectivity, or a longer-term disruption caused by a cyber attack [2].

The CSIR is currently conducting an awareness raising research and development project with a view to preparing sectors of society to become better cyber citizens. Other institutions, such as the Nelson Mandela Metropolitan University have similar initiatives. Could it be argued that these initiatives form an integral part of cyber warfare, seeing that the battlefield could actually become the home of an average citizen?