SAICSIT Papers in the ACM-DL

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Dear editor of SACJ and academic colleagues,

As SACJ is the 'house journal' of the SAICSIT community, and as the annual SAICSIT conference papers are published in the ACM's digital library (ACM-DL, https://dl.acm.org/) since many years, the following bibliometric information might perhaps be interesting for several of your readers.

On the *5th of October 2019* I browsed the ACM-DL's database with the search key 'South Africa' in the 'conference location' field such as to obtain all ACM-DL-listed conference papers which were at any time presented in South Africa. This search yielded (inter alia) all SAICSIT papers. My search was motivated by my desire to know how well these papers are received by the international ICT (informatics and computer science) scholarly community. For this purpose I used the ACM-DL's sorting function to rank the retrieved SAICSIT papers by their citation numbers.

Though I know many cases in which 'Google Scholar' finds more citations per paper than the ACMl-DL —SAICSIT papers included— I did not extend my citation search to the 'Google Scholar' database for these two reasons:

- Convenience: Alas the 'Google Scholar' search mask does not offer any specific 'conference' or 'location' field, such as any 'Google Scholar' search specifically for SAICSIT papers would have become very tedious and time-consuming, whereas I wanted to 'produce' this letter to the editor as swiftly as possible.

- As the ACM-DL is the 'house' of the SAICSIT papers, I was particularly interested in seeing how well these papers are received by their very own 'house community', i.e.: the ACM.

For the sake of convenience (and swift production of this letter to the editor) I also refrained from checking how many of each SAICSIT paper's citations were self-citations (by the same authors) or in-house citations (by authors' close collaborators or colleagues from within the same academic institutions).

In spite of these above-mentioned shortcomings, I believe that my search results are sill interesting enough to justify the writing of this letter. *Most* of the SAICSIT papers *did not receive any* ACM-DL-registered citation at all so far — however there was also one paper with the respectable number of #33 ACM-DL-registered citations. In order to make the retrieved results more interesting for your community of readers, I have *ranked* all positively cited SAICSIT papers according to the following

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method:

$$r := \frac{c}{a}$$

whereby

- r is a paper P's ranking value (the larger the better);
- $c > 0$ is P's #number of ACM-DL-registered citations (5th of Oct. 2019);
- $a := (2019 - y) > 0$ is P's current age with y as P's year of publication.

Thus, in case that $c(P) = c(P')$ for two different papers P, P', my ranking gives a higher rank to the younger paper, which is only fair since the older paper *would* have had 'more time' to 'gather' citations.

In the cases of $r(P) = r(P')$ for two different papers P, P', I sorted them first by numbers of citations ($c(P) > c'(P')$), then lexicographically (alphabetically) by the words of their titles, (t, t'). All in all, in this manner it should be interesting to see more or less at once glance what have been the most *successful research themes* of SAICSIT since this conference's papers have been stored in the ACM-DL.

The ranking, so prepared, is shown in the following long enumerated list ('best first'), whereby each list item n for a SAICSIT paper $P(n)$ has the following structure:

$$n.\ \boldsymbol{r}/\#c/y\colon\ t$$

1. **3.33**/#20/2013: *A case study in the gamification of a university-level games development course*
2. **3.00**/#33/2008: *Predicting technology acceptance and adoption by the elderly: a qualitative study*
3. **2.00**/#10/2014: *Designing Social Media for Community Information Sharing in Rural South Africa*
4. **1.50**/#18/2007: *A comparative study of two usability evaluation methods using a web-based e-learning application*
5. **1.45**/#16/2008: *Scientific computing using virtual high-performance computing: a case study using the Amazon elastic computing cloud*
6. **1.43**/#10/2012: *Symbolic execution of programs with strings*
7. **1.42**/#17/2007: *Modelling the factors that influence mobile phone adoption*
8. **1.30**/#13/2009: *Evaluation criteria for assessing the usability of ERP systems*
9. **1.18**/#13/2008: *Investigating the use of Grounded Theory in information systems research*

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10. **1.17**/#7/2013: *Design-based research - the educational technology variant of design research: illustrated by the design of an m-learning environment*
11. **0.82**/#9/2008: *Automatic marking with Sakai*
12. **0.78**/#7/2010: *The evaluation of an adaptive user interface model*
13. **0.75**/#3/2015: *The use of Facebook by a Community Policing Forum to combat crime*
14. **0.71**/#5/2012: *Audio pacemaker: walking, talking indigenous knowledge*
15. **0.70**/#7/2009: *Glaserian and Straussian grounded theory: similar or completely different?*
16. **0.67**/#2/2016: *A System for a Hand Gesture-Manipulated Virtual Reality Environment*
17. **0.67**/#2/2016: *Domestication of Free Wi-Fi Amongst People Living in Disadvantaged Communities in the Western Cape Province of South Africa*
18. **0.67**/#2/2016: *Validating Mobile Phone Design Guidelines: Focusing on the Elderly in a Developing Country*
19. **0.60**/#6/2009: *Exploring the African Village metaphor for computer user interface icons*
20. **0.60**/#6/2009: *Plagiarising of source code by novice programmers a cry for help?*
21. **0.60**/#6/2009: *Usability evaluation methods: mind the gaps*
22. **0.58**/#7/2007: *Examining the influence of demographic factors on internet users' information privacy concerns*
23. **0.56**/#5/2010: *Mobile phone adoption: do existing models adequately capture the actual usage of older adults?*
24. **0.56**/#5/2010: *Mobile user experience in a M-learning environment*
25. **0.55**/#6/2008: *Towards a taxonomy of network scanning techniques*
26. **0.50**/#4/2011: *Mobile phones and digital divide in East African countries*
27. **0.50**/#4/2011: *Providing media download services in African taxis*
28. **0.50**/#4/2011: *Understanding culturally distant end-users through intermediary-derived personas*
29. **0.50**/#3/2013: *A conceptual framework for delivering cost effective business intelligence solutions as a service*
30. **0.50**/#3/2013: *Crowd computing: a literature review and definition*

https://doi.org/10.18489/sacj.v31i2.788

31. **0.50**/#3/2013: *First year student performance in a test for computational thinking*
32. **0.50**/#2/2015: *SPLicing TABASCO: Custom-Tailored Software Product Line Variants from Taxonomy-Based Toolkits*
33. **0.50**/#1/2017: *Agile and hackathons: a case study of emergent practices at the FNB codefest*
34. **0.50**/#1/2017: *Challenges to the successful implementation of social media in a South African municipality*
35. **0.50**/#1/2017: *Investigating the effects various compilers have on the electromagnetic signature of a cryptographic executable*
36. **0.50**/#1/2017: *Morphological cluster induction of Bantu words using a weighted similarity measure*
37. **0.45**/#5/2008: *Agile systems development and stakeholder satisfaction: a South African empirical study*
38. **0.45**/#5/2008: *An application of genetic algorithms to the school timetabling problem*
39. **0.44**/#4/2010: *Critical success factors for information systems outsourcing management: a software development lifecycle view*
40. **0.44**/#4/2010: *Is tilt interaction better than keypad interaction for mobile map-based applications?*
41. **0.43**/#3/2012: *Effects of application type on the choice of interaction modality in IVR systems*
42. **0.43**/#3/2012: *Hardware and software for skateboard trick visualisation on a mobile phone*
43. **0.43**/#3/2012: *Moses: method for selecting senior mobile phones: supporting design & choice for the elderly*
44. **0.42**/#5/2007: *An ontology-based, multi-modal platform for the inclusion of marginalized rural communities into the knowledge society*
45. **0.40**/#4/2009: *A lightweight methodology to improve web accessibility*
46. **0.40**/#4/2009: *The adoption of open source software in business models: a Red Hat and IBM case study*
47. **0.40**/#4/2009: *Towards an artificial neural network-based simulator for behavioural evolution in evolutionary robotics*
48. **0.40**/#2/2014: *Abstracting and Narrating Novice Programs Using Regular Expressions*

https://doi.org/10.18489/sacj.v31i2.788

49. **0.40**/#2/2014: *Employee perceptions of BYOD in South Africa: Employers are turning a blind eye?*
50. **0.40**/#2/2014: *Intrinsic Relations between Data Science, Big Data, Business Analytics and Datafication*
51. **0.40**/#2/2014: *Measuring Method Complexity of the Case Management Modeling and Notation (CMMN)*
52. **0.38**/#3/2011: *A domain-specific language for URDAD based requirements elicitation*
53. **0.38**/#3/2011: *Browser-based software for technology transfer*
54. **0.38**/#3/2011: *Evaluating web conferencing tool effectiveness*
55. **0.38**/#3/2011: *ICT career track awareness amongst ICT graduates*
56. **0.36**/#4/2008: *An analysis of representations for hyper-heuristics for the uncapacitated examination timetabling problem in a genetic programming system*
57. **0.36**/#4/2008: *Guidelines for secure software development*
58. **0.36**/#4/2008: *Usability context analysis for virtual reality training in South African mines*
59. **0.33**/#4/2007: *A probabilistic movement model for shortest path formation in virtual ant-like agents*
60. **0.33**/#3/2010: *A mobile commerce application for rural economy development: a case study for Dwesa*
61. **0.33**/#3/2010: *A study into the use of hyper-heuristics to solve the school timetabling problem*
62. **0.33**/#3/2010: *An informed genetic algorithm for the high school timetabling problem*
63. **0.33**/#3/2010: *Comparing and analyzing the computational complexity of FCA algorithms*
64. **0.33**/#3/2010: *Design and evaluation of a multimodal interface for in-car communication systems*
65. **0.33**/#2/2013: *Cooperating to buy shoes: an application of picking cycles in directed graphs*
66. **0.33**/#2/2013: *Ease of use and usefulness of webinars in an open distance learning environment: an activity theory perspective*
67. **0.33**/#1/2016: *Can I Have Your Attention, Please? An Empirical Investigation of Media Multitasking during University Lectures*

https://doi.org/10.18489/sacj.v31i2.788

68. **0.33**/#1/2016: *FINCHAN: A Grammar-based Tool for Automatic Comprehension of Financial Instant Messages*
69. **0.33**/#1/2016: *Persuasive Design for Behaviour Change Apps: Issues for Designers*
70. **0.30**/#3/2009: *GPU packet classification using OpenCL: a consideration of viable classification methods*
71. **0.29**/#2/2012: *An exploratory survey of design science research amongst South African computing scholars*
72. **0.29**/#2/2012: *How can usability contribute to user experience?: a study in the domain of e-commerce*
73. **0.29**/#2/2012: *The adoption of e-Learning in corporate training environments: an activity theory based overview*
74. **0.29**/#2/2012: *Towards a framework for decision making regarding IT adoption*
75. **0.27**/#3/2008: *An investigation into the implementation of open source software within the SA government: an emerging expansion model*
76. **0.27**/#3/2008: *Investigating the impact of the external environment on strategic information systems planning: a qualitative inquiry*
77. **0.27**/#3/2008: *Planning as model checking: the performance of ProB vs NuSMV*
78. **0.25**/#3/2007: *Assessment of a framework to compare software development methodologies*
79. **0.25**/#2/2011: *A sketch-based articulated figure animation tool*
80. **0.25**/#2/2011: *Enhancing identification mechanisms in UML class diagrams with meaningful keys*
81. **0.25**/#2/2011: *Issues of adoption: have e-learning management systems fulfilled their potential in developing countries?*
82. **0.25**/#2/2011: *Successful ICT service delivery: enablers, inhibitors and hygiene factors: a service provider perspective*
83. **0.25**/#2/2011: *The influence of gender and internet experience on the acceptability of smell as interaction modality*
84. **0.25**/#2/2011: *Towards a framework for the adoption of business intelligence in public sector organisations: the case of South Africa*

https://doi.org/10.18489/sacj.v31i2.788

85. **0.25**/#1/2015: *CAPP: A C++ Aspect-Oriented Based Framework for Parallel Programming with OpenCL*
86. **0.25**/#1/2015: *Contextualizing BYOD in SMEs in developing countries*
87. **0.25**/#1/2015: *Contributor Motivation in Online Knowledge Sharing Communities with Reputation Management Systems*
88. **0.25**/#1/2015: *Developing a Conceptual Model for Facilitating the Issuing of Digital Badges in a Resource Constrained Environment*
89. **0.25**/#1/2015: *On the prioritization of data quality challenges in e-health systems in South Africa*
90. **0.25**/#1/2015: *SpotMal: A hybrid malware detection framework with privacy protection for BYOD*
91. **0.25**/#1/2015: *The User Experience Landscape of South Africa*
92. **0.25**/#1/2015: *Toward a framework for ontology modularity*
93. **0.25**/#1/2015: *Use of the Alice visual environment in teaching and learning object-oriented programming*
94. **0.25**/#1/2015: *Using Business Intelligence to Support Strategic Sustainability Information Management*
95. **0.22**/#2/2010: *Deriving a digraph isomorphism for digraph compliance measurement*
96. **0.22**/#2/2010: *Determining requirements within an indigenous knowledge system of African rural communities*
97. **0.22**/#2/2010: *Investigating the feasibility factors of synthetic sign language visualization methods on mobile phones*
98. **0.22**/#2/2010: *Parallel packet classification using GPU co-processors*
99. **0.22**/#2/2010: *The complementary role of two evaluation methods in the usability and accessibility evaluation of a non-standard system*
100. **0.20**/#2/2009: *A framework and methodology for knowledge management system implementation*
101. **0.20**/#2/2009: *An analysis of the international discourse about women in information technology*
102. **0.20**/#2/2009: *An evaluation of techniques for image searching and browsing on mobile devices*

https://doi.org/10.18489/sacj.v31i2.788

103. **0.20**/#2/2009: *The revised developmental approach to the uncapacitated examination timetabling problem*

104. **0.20**/#1/2014: *An Ant-based Mobile Agent Approach to Resource Discovery in Grid Computing*

105. **0.20**/#1/2014: *Applying design-based research for developing virtual reality training in the South African mining industry*

106. **0.20**/#1/2014: *Mobile-Health Tool Use and Community Health Worker Performance in the Kenyan Context: A Task-Technology Fit Perspective*

107. **0.20**/#1/2014: *The Effects of Mother Tongue and Text Difficulty on Gaze Behaviour while Reading Afrikaans Text*

108. **0.18**/#2/2008: *A model for eliciting user requirements specific to South African rural areas*

109. **0.18**/#2/2008: *Comparison of the effects of professional and pedagogical program development environments on novice programmers*

110. **0.18**/#2/2008: *Using adaptive interfaces to improve mobile map-based visualisation*

111. **0.17**/#2/2007: *A model to assess the benefit value of knowledge management in an IT service provider environment*

112. **0.17**/#2/2007: *Agile software development: a contemporary philosophical perspective*

113. **0.17**/#2/2007: *Constraint-based conversion of fiction text to a time-based graphical representation*

114. **0.17**/#2/2007: *Criteria used in selecting effective requirements elicitation procedures*

115. **0.17**/#1/2013: *A new mapping function to improve the accuracy of a video-based eye tracker*

116. **0.17**/#1/2013: *Categorizing the provision of mobile centric information access and interaction for higher educational institutions*

117. **0.17**/#1/2013: *Effectiveness with EEG BCIs: exposure to traditional input methods as a factor of performance*

118. **0.17**/#1/2013: *Evaluating the acceleration of typical scientific problems on the GPU*

119. **0.17**/#1/2013: *Evaluating performance of long short-term memory recurrent neural networks on intrusion detection data*

120. **0.17**/#1/2013: *Numerical verification of bidirectional reflectance distribution functions for physical plausibility*

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121. **0.17**/#1/2013: *Personally identifiable information leakage through online social networks*
122. **0.17**/#1/2013: *The usability of collaborative tools: application to business process modelling*
123. **0.17**/#1/2013: *Using machine learning to predict the driving context whilst driving*
124. **0.14**/#1/2012: *A longitudinal analysis of ICT project success*
125. **0.14**/#1/2012: *ABox abduction in ALC using a DL tableau*
126. **0.14**/#1/2012: *Are mobile in-car communication systems feasible? a usability study*
127. **0.14**/#1/2012: *Automated coverage calculation and test case generation*
128. **0.14**/#1/2012: *CaptureFoundry: a GPU accelerated packet capture analysis tool*
129. **0.14**/#1/2012: *Changing career choice factors as the economic environment changes*
130. **0.14**/#1/2012: *Internet use and expatriate adjustment: understanding the degree of isolation experienced in kingdom of Saudi Arabia*
131. **0.14**/#1/2012: *Monte-Carlo tree search parallelisation for computer go*
132. **0.14**/#1/2012: *Performance assessment of dead-zone single keyword pattern matching*
133. **0.14**/#1/2012: *What is software architecture?*
134. **0.13**/#1/2011: *Adoption of Green IS in South Africa: an exploratory study*
135. **0.13**/#1/2011: *Contextual factors influencing strategic information systems plan implementation*
136. **0.13**/#1/2011: *Day labour mobile electronic data capture and browsing system*
137. **0.13**/#1/2011: *Empirical comparison of four classifier fusion strategies for positive-versus-negative ensembles*
138. **0.13**/#1/2011: *Proposed stages of a rural ICT comprehensive evaluation framework in ICT for rural development projects*
139. **0.13**/#1/2011: *The accreditation of ICT degree programs in South Africa*
140. **0.13**/#1/2011: *The impact of sensor fusion on tilt interaction in a mobile map-based application*
141. **0.13**/#1/2011: *Using information visualization to support web service discovery*
142. **0.13**/#1/2011: *Using mass video notification methods to assist deaf people*
143. **0.13**/#1/2011: *Using N-grams to identify mathematical topics in MXit lingo*

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144. **0.11**/#1/2010: *A four-way framework for validating a specification*
145. **0.11**/#1/2010: *A South African perspective of the international discourse about women in information technology*
146. **0.11**/#1/2010: *A virtual VLSI architecture for computer hardware evolution*
147. **0.11**/#1/2010: *An intelligent framework for mobile devices*
148. **0.11**/#1/2010: *A-POInter: an adaptive mobile tourist guide*
149. **0.11**/#1/2010: *Integrated security framework for low cost RFID tags*
150. **0.11**/#1/2010: *IT moderation going green*
151. **0.11**/#1/2010: *Motivation and learning preferences of information technology learners in South African secondary schools*
152. **0.11**/#1/2010: *Ontology goes postmodern in ICT*
153. **0.11**/#1/2010: *Panopticon: a scalable monitoring system*
154. **0.11**/#1/2010: *PH2: an hadoop-based framework for mining structural properties from the PDB database*
155. **0.11**/#1/2010: *Quality metrics for mashups*
156. **0.11**/#1/2010: *Sweetening the medicine: educating users about information security by means of game play*
157. **0.11**/#1/2010: *The impact of accents on automatic recognition of South African English speech: a preliminary investigation*
158. **0.11**/#1/2010: *Toward a service creation framework: a case of intelligent semantic services*
159. **0.10**/#1/2009: *A hybrid neural network and Minimax algorithm for zero-sum games*
160. **0.09**/#1/2008: *Contemplating systematic software reuse in a project-centric company*
161. **0.09**/#1/2008: *Designing technology for young children: what we can learn from theories of cognitive development*
162. **0.09**/#1/2008: *Development and implementation of an institutional repository within a science, engineering and technology (SET) environment*
163. **0.09**/#1/2008: *Do online buying behaviour and attitudes to web personalization vary by age group?*

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164. **0.09**/#1/2008: *Java Micro Edition and Adobe Flash Lite for arcade-style mobile phone game development: a comparative study*

165. **0.09**/#1/2008: *Maintaining customer profiles in an e-commerce environment*

166. **0.09**/#1/2008: *Usability evaluation of the South African National Accessibility Portal interactive voice response system*

167. **0.09**/#1/2008: *Using mobile preference-based searching to improve tourism decision support*

168. **0.08**/#1/2007: *Supporting CS1 with a program beacon recognition tool*

169. **0.08**/#1/2007: *Generic process model structures: towards a standard notation for abstract representations*

170. **0.08**/#1/2007: *KernTune: self-tuning Linux kernel performance using support vector machines*

Just by chance this list of positively cited papers currently has the 'round' number of 170 elements (if I have not forgotten anything from what I retrieved from the ACM-DL).

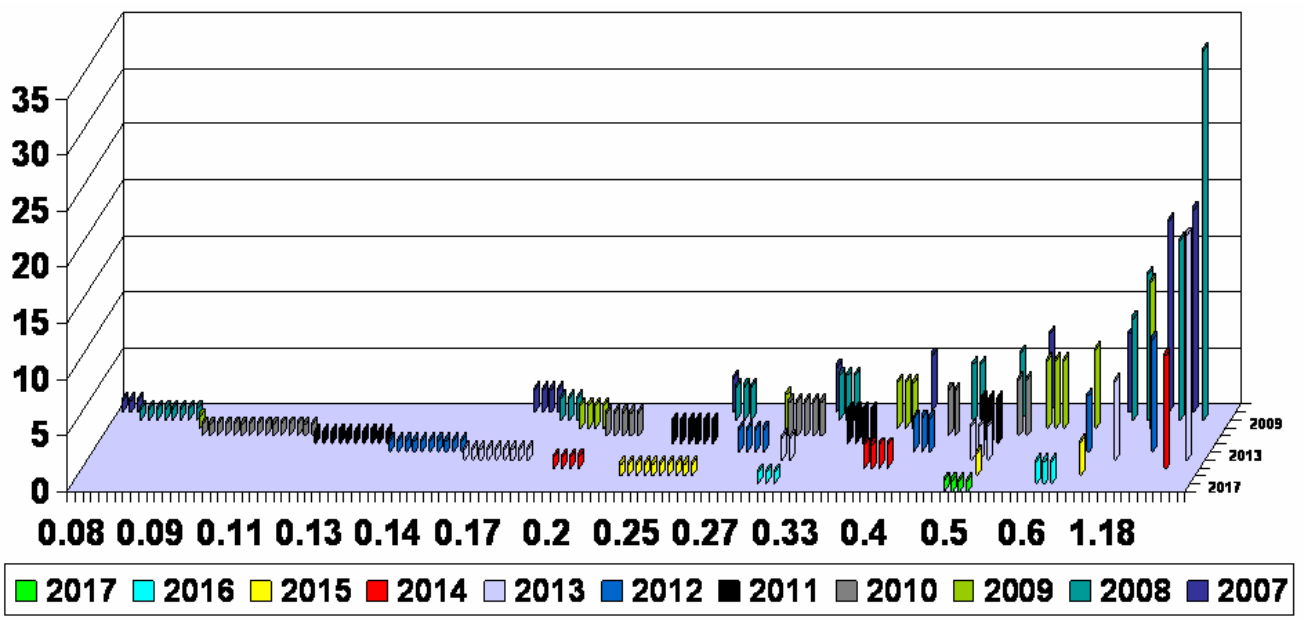

Figure 1: 'City graph' of all 170 SAICSIT papers with $c > 0$ ichartn the ACM-DL (5th Oct. 2019): x-axis shows r, y-axis shows c, z-axis shows the years 2007-2017.

For further illustration I plotted each of these 170 paper's two-dimensional (r, c) value in Figure 1: some 'clustering' is clearly visible. The different colours in Figure 1 represent the diferent event years (2007–2017; created with the MS PowerPoint software package).

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It is up to your readers to infer their own conclusions (e.g.: what are 'attractive' research topics?) by their own methods (e.g.: '*Wordle*' word frequency analysis) from the information which I have provided in this letter as a service to the SACJ/SAICSIT community. Most concerning is perhaps what is invisible in this letter, namely the large number of SAICSIT papers for which the ACM-DL says: "0 citations" —which includes *all* SAICSIT conferences *before* the year 2007, and so far also SAICSIT'2018— in spite of the ACM-DL's global visibility and accessability (though, as mentioned above, more citations are likely to be found with help of other tools such as 'Google Scholar').

With kind regards: Stefan Gruner

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