



## RESEARCH OUTPUTS 2019

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#### Research Articles

**Akinyelu, A.A.** 2019. Machine learning and nature inspired based phishing detection: A literature survey. *International Journal on Artificial Intelligence* 28(5): 1-35. DOI: <https://doi.org/10.1142/S021821301999001X>.

Ezugwu, A.E., Adeleke, O.J., **Akinyelu, A.A.** & Viriri, S. 2019. A conceptual comparison of several metaheuristic algorithms on continuous problems. *Neural Computing and Applications* (2019): 1-45. DOI: <https://doi.org/10.1007/s00521-019-04132-w>.

**Akinyelu, A.A.** & Ezugwu, A.E. 2019. Nature inspired instance selection techniques for support vector machine speed optimization. *IEEE Access* 7(1): 154581-154599.

**Akinyelu, A.A.**, Ezugwu, A.E. & Adewumi, A.O. 2019. Ant colony optimization edge selection for support vector machine speed optimization. *Neural Computing & Applications* (2019): 1-35. DOI: <https://doi.org/10.1007/s00521-019-04633-8>.

**Blignaut, P.** 2019. A cost function to determine the optimum filter and parameters for stabilizing gaze data. *Journal of Eye Movement Research* 12(2): 1-11. <https://doi.org/10.16910/jemr.12.2.3>.

**Blignaut, P.J.**, Janse van Rensburg, E. & Oberholzer, M. 2019. Visualization and quantification of eye tracking data for the evaluation of oculomotor function. *Heliyon* 5(1): e01127-1-e01127-25. DOI: <https://doi.org/10.1016/j.heliyon.2019.e01127>.

**De Wet, L.** 2019. Model for the continuance use intention of mobile learning games. *Journal for New Generation Sciences* 17(1): 73-89.

**Kogeda, O.P.** 2019. A model for evaluating digital forensic tools. *Journal of Engineering and Applied Science* 14(19): 7048-7058.

Mathonsi, T., **Kogeda, O.P.** & Olwal, T. 2019. Enhanced intersystem handover algorithm for heterogeneous wireless networks. *Journal of Advanced Computational Intelligence and Intelligent Informatics* 23(6): 1063-1072.

**Musumba, G.W. & Wario, R.D.** 2019. A hybrid technique for partner selection in virtual enterprises. *African Journal of Science, Technology, Innovation and Development Online*: 1-19. DOI: <https://doi.org/10.1080/20421338.2019.1655212>.

**Musumba G.W. & Wario R.D.** 2019. Towards fuzzy analytical hierarchy process model for performance evaluation of healthcare sector services. *Communications in Computer and Information Science* 1026: 93-118. DOI: [https://doi.org/10.1007/978-3-030-26630-1\\_9](https://doi.org/10.1007/978-3-030-26630-1_9).

**Nel, W., Burger, A. & Bezuidenhout, R.** 2019. Troulose oorspronverifikasie van elektroniese intellektuele eiendom deur middel van blokskaketegnologie ("blockchain technology"). *South African Journal for Science and Technology*: 1-2.

**Senekal, B.** 2019. #doomsdayprepper: Analysing the online prepper community on Instagram. *Ensovoort* 40(11): 1-21.

**Senekal, B. & Kotzé, E.** 2019. Oopbronintelligensie (OSINT) vir veiligheidsdoeleindes: Die ontwikkeling van 'n dataontledingspylyn om relevante WhatsApp-boodskappe te ontleed. *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* 38(1): 1-10. DOI: <https://hdl.handle.net/10520/EJC-1710e4963d>.

**Senekal, B. & Kotzé, E.** 2019. Open source intelligence (OSINT) for conflict monitoring in contemporary South Africa: Challenges and opportunities in a big data context. *African Security Review* 28(1): 19-37. DOI: <https://doi.org/10.1080/10246029.2019.1644357>.

**Stott, A. & Beelders, T.R.** 2019. The influence of science reading comprehension on South African township learners' learning of science. *South African Journal of Science* 115(1/2): 1-9. DOI: <https://doi.org/10.17159/sajs.2019/5146>.

**Verkijika, S.F.** 2019. Digital textbooks are useful, but not everyone wants them: The role of technostress. *Computers & Education* 140: 1-16. DOI: <https://doi.org/10.1016/j.compedu.2019.05.017>.

**Verkijika, S.F.** 2019. If you know what to do, will you take action to avoid mobile phishing attacks: self-efficacy, anticipated regret and gender. *Computers in Human Behavior* 101: 286-296. DOI: <https://doi.org/10.1016/j.chb.2019.07.034>.

**Verkijika, S. F.** 2019. Understanding the acceptance and use of M-Learning Apps by entrepreneurs: An application of the social-cognitive and motivational theories. *Information Resources Management Journal (IRMJ)* 32(4): 42-55. DOI: <https://doi.org/10.4018/IRMJ.2019100103>

**Verkijika, S.F. & De Wet, L.** 2019. Understanding word-of-mouth (WOM) intentions of mobile app users: The role of simplicity and emotions during first interaction. *Telematics & Informatics* 41: 218-228. DOI: <https://doi.org/10.1016/j.tele.2019.05.003>

Zemblys, R., Niehorster, D.C. & Holmqvist, K. 2019. gazeNet: End-to-end eye-movement event detection with deep neural networks. *Behavioral Research* 51: 840–864. <https://doi.org/10.3758/s13428-018-1133-5>.

### **Books/Chapters in Book**

Brokensha, S., Kotzé, E. & Senekal, B.A. 2019. *Reinventing the Social Scientist and Humanist in the Era of Big Data: A perspective from South African Scholars*. SUN MeDIA: Bloemfontein.

## Conference Contributions

### Conference Papers/Posters

**Akinyelu, A.A.** 2019. *Improved bio-inspired technique for big data analytics and machine learning speed optimization*. Poster presented at the South African Forum for Artificial Intelligence Research (FAIR) 2019. Cape Town, South Africa. 4-6 December.

**Bezuidenhout, R., Nel, W. & Burger, A.** 2019. *Improving the energy efficiency of bitcoin mining*. Paper delivered at the 1<sup>st</sup> Free State Joint Provincial Summit on the 4IR (Industrial Revolution), Bloemfontein, South Africa. 28-29 November.

**Holmqvist, K. & Blignaut, P.J.** 2019. *Small eye movements cannot be reliably measured by video-based P-CR eye trackers*. Poster presented at the European Conference on Eye Movement, Alicante, Spain. 18-22 August.

Lombard, W., Van Zyl, J. & **Beelders, T.R.** 2019. *Red meat consumer's preferences: A case study of the Mangaung Metropolitan Municipality*. Paper delivered at the 22<sup>nd</sup> International Farm Management Association Congress, Tasmania, Australia. 03-08 March.

### Conference Proceedings

Kau, F.M. & **Kogeda, O.P.** 2019. Impact of subscription fraud in mobile telecommunication companies. In *Proceedings of the IEEE 2019 Open Innovations Conference*. Cape Town, South Africa. 02 October-04 October. Nixon O., Odhiambo, J. (eds). IEEE. pp. 42-47

**Kogeda, P.** 2019. A prediction model for mitigating Tuberculosis infection for HIV patients at Greater Tubatse Local Municipality in South Africa. In: *Proceedings of the South African Telecommunication Networks and Applications Conference (SATNAC)*. Ballito, South Africa. 01-04 September. Lewis J., Balmahoon T. (eds). SATNAC. pp. 234-239.

**Kogeda, P.** 2019. A data-driven decision support system for augmenting safety fishing in South Africa. In: *Proceedings of the South African Telecommunication Networks and Applications Conference (SATNAC)*. Ballito, South Africa. 01-04 September. Lewis J., Balmahoon T. (eds). SATNAC. pp. 93-118.

**Musumba, G.W. & Wario, R.D.** 2019. A decision-making approach to evaluation of learning components in adaptive educational systems. In: *Proceedings of the 48<sup>th</sup> Annual Conference of the South African Computer Lecturers' Association (SACLA)*. Northern Drakensberg, South Africa. 15-17 July. Tait B., Kroeze J (eds). SACLA 2019. pp. 55-72

**Musumba, G.W. & Wario, R.D.** 2019. Towards a context-aware adaptive e-learning architecture. In: *Proceedings of the 47<sup>th</sup> Annual South African Computer Lecturers' Association (SACLA). Communications in Computer and Information Science*. Gordon's Bay, South Africa. 18-20 June 2018. Kabanda S., Suleman H., Gruner S. (eds) Communications in Computer and Information Science, vol 963. Springer, Cham. pp.191-206. DOI: [https://doi.org/10.1007/978-3-030-05813-5\\_13](https://doi.org/10.1007/978-3-030-05813-5_13).

**Musumba, G.W., & Wario, R.D.** 2019. Towards a Personalized Adaptive Remedial e-Learning Model. In: *IST-Africa 2019 Conference Proceedings (IST-Africa)*. Nairobi, Kenya. 08-10 May 2019. Cunningham P., Cunningham M. (eds). IEEE. pp. 527-537.

**Musumba G.W., Wario R.D.** 2019. Towards Fuzzy Analytical Hierarchy Process Model for Performance Evaluation of Healthcare Sector Services. In: Mekuria F., Nigussie E., Tegegne T. (eds) *Information and Communication Technology for Development for Africa. ICT4DA 2019*. Communications in Computer and Information Science, vol 1026. Springer, Cham

**Nel G., Nel L.** 2019. Motivational Value of Code.org's Code Studio Tutorials in an Undergraduate Programming Course. In: *Proceedings of the 47<sup>th</sup> Annual Conference of the South African Lecturers' Association (SACLA)*. Kabanda S., Suleman H., Gruner S. (eds) ICT Education. SACLA 2018. Communications in Computer and Information Science, vol 963. Springer, Cham.

DOI: [https://doi.org/10.1007/978-3-030-05813-5\\_12](https://doi.org/10.1007/978-3-030-05813-5_12).

**Nel, W., De Wet, L. & Schall, R.** 2019. The effect of search engine, search term and occasion on brain-computer interface metrics for emotions when ambiguous search queries are used. In: *Proceedings of the 3<sup>rd</sup> International Conference on Computer-Human Interaction Research and Applications*. Vienna, Austria. 20-21 September.

**Oriola, O. & Kotzé, E.** 2019. Automatic Detection of Abusive South African Tweets using a Semi-Supervised Learning Approach. In: *Proceedings of the 1<sup>st</sup> South African Forum for Artificial Intelligence Research (FAIR 2019)*. Cape Town, South Africa. 3-6 December.

**Verkijika, S.F.** 2019. An evaluation of the password practices on leading e-commerce websites in South Africa. International Information Security Conference 2018. Venter, H., Looock, M., Eloff, M., Eloff, J. (eds). In: *Communications in Computer and Information Science*. Springer Nature Switzerland. pp. 973: 104-114. DOI: [https://doi.org/10.1007/978-3-030-11407-7\\_8](https://doi.org/10.1007/978-3-030-11407-7_8).

**Wario R.D. & Nyaga, C.** 2019. A survey of the constraints encountered in dynamic vision-based sign language hand gesture recognition. *Universal Access in Human Computer Interaction. 13<sup>th</sup> International Conference*. Antona, M., Stephanidis, C. (eds). Orlando, Florida, United States of America. *Lecture Notes in Computer Science*. Springer Nature Switzerland. pp: 11573: 373-382.

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