PROF. SERESTINA VIRIRI
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Computer Science Discipline
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PERSONAL PROFILE

I am a **Full Professor of Computer Science** in the School of Mathematics, Statistics and Computer Science at the **University of KwaZulu-Natal**, (UKZN). I am a **Visiting Research Professor** at **Sudan University of Science and Technology** (SUST), and at the **University of Johannesburg** (UJ).

I am an **NRF-Rated C2** researcher - Established researcher with a sustained recent record of high quality and impactful research productivity in Computer Science, in the Computer Vision niche.

I was an **Associate Professor** of Computer Science at the University of South Africa (UNISA), **Senior Lecturer** at the University of KwaZulu-Natal, **Lecturer and HoD** at the Walter Sisulu University, **Lecturer and HoD** at the Bindura University of Science Education.

RESEARCH STATEMENT

My research area is mainly centred in **Artificial Intelligence**, **Computer Vision, Image Processing, Machine Learning, Deep Learning, Medical Image Analysis, Pattern Recognition**, and other Image processing related areas such as (**Biometrics,** etc.).

EDUCATION

1. **PhD (Computer Science)**, University of KwaZulu-Natal, South Africa, 2010. *Bi-Modal Biometrics Authentication based on Iris and Signature.*
2. **MSc (Computer Science)**, Universidad de La Habana, Cuba, 2002. *Design Patterns for J2EE Web Component Development.*
3. **BSc (Mathematics & Computer Science)**, Universidad EJ Varona, Cuba, 1998.

PROFESSIONAL MEMBERSHIPS

- Institute of Electrical and Electronics Engineers (**Senior Member, IEEE**).
- International Association of Computer Science and Information Technology (IACSIT).
- Pattern Recognition Association of South Africa (PRASA).
- South African Institute for Computer Scientists and Information Technologists (SAICSIT).
- Southern African Computer Lecturers' Association (SACLA).

RESEARCH INTERESTS

- Artificial Intelligence, Computer Vision and Image Processing.
- Biometrics, Multi-Modal Biometrics.
- Medical Image Analysis, Nuclear Medicine.
- Deep Learning, Machine Learning.

RESEARCH SUPERVISION

PhD Projects Completed (13)

- **Adaptive Feature Characterization for Remote Sensing Image Scene Classification** (R. Tombe, 2021).
- **Facial Age Estimation using Deep Learning with Bayesian Optimization** (M. Ahmed, 2021).
- **Component-based Facial Expression Recognition using Deep Learning** (N. Nour, 2021).
- **Deep Learning Framework for Automated Detection and Analysis of Skin Lesion Images** (A. Adegun, 2020).
- **Age-Group and Gender Classification of Unfiltered Human Faces using Deep Learning** (O. Ajala-Agbo, 2020).
- **Skin Lesion Segmentation Techniques Towards Melanoma Detection** (O. Salih, 2020).
- **Facial Expression Recognition with Hybrid Local Feature Extraction and Deep Learning** (K. Chengeta, 2020).
- **Retinal Blood Vessel Segmentation using Random Forest Gabor Feature Selection and Automatic Thresholding** (M. Gwetu, 2019).
- **Modelling of Artificial Intelligence Based Demand Side Management Techniques for Mitigating Energy Poverty in Smart Grids** (C.G. Monyei, 2018)
- **Search and Selection Methods for Hyper-heuristics** (S.M. Akandwanaho, 2018).
- **Accurate Plant Classification using Leaves Recognition** (J.R. Kala, 2017).
- **Multi-Level Parallelization for Accurate and Fast Medical Image Retrieval** (K. Chikamai, 2016).
- **Characterization of Retinal Images for Detection and Classification of Diabetic Retinopathy** (T. Mapayi, 2015).

Masters Projects Completed (14)

- **A Patch-based Convolutional Neural Network for Localized MRI Brain Segmentation** (T. Vambe, 2021).
- **Machine Learning Approaches for Skin Cancer Detection for Macroscopic and Dermoscopic Images** (V. Pillay, 2020).
- **Skeletal Age Detection from Pediatric Hand Radiographs** (D. Hirasen, 2020).
- **Real Time Facial Recognition Over the Web Using Localized Neural Networks and WebAssembly** (P. Pillay, 2020).
- **Liver Segmentation using 3D CT Scans** (A. Hiraman, 2019)
- **Deep Learning for Accurate Plant Classification** (I.T. Kwangware, 2018).
- **Hybrid Component-based Facial Recognition** (A. Gumede, 2018).
- **Online Signature Verification using Hybrid Transform Features** (A. Mlaba, 2018).
- **Gender Classification Based on Face Recognition** (M. Bayana, 2018).
- **Component-based Ethnicity Identification from Face Images** (A. Booysens, 2016).
- **Comparison of Segmentation Methods for Accurate Dental Caries Detection** (D. Osterloh, 2016).
- **Medical Image Segmentation: Lungs Infection Detection** (K. Oluyide, 2015).
- **An Investigation into Offline Handwritten Signature Verification** (Y. Moolla, 2012).
- **High Performance Computing Content-based Medical Image Retrieval** (K. Chikamai, 2012).

PUBLICATIONS

https://scholar.google.com/citations?user=I0zwv-oAAAAJ&hl=en
https://dblp.org/pers/v/Viriri:Serestina.html
https://www.semanticscholar.org/author/Serestina-Viriri/1700906