

Nixson Okila

Professional summary

I am a computer scientist and researcher with extensive expertise in applying artificial intelligence (AI) to address challenges in healthcare and public systems. My research spans computer vision, medical imaging, machine learning, and health informatics, with a focus on designing and implementing intelligent systems for medical image classification, segmentation, and anomaly detection using advanced deep learning architectures, including convolutional neural networks, generative models, and transformer-based approaches.

I integrate domain-specific medical data—such as X-rays, ultrasound scans, and blood smear images—with structured population health records to enhance clinical workflows and diagnostic accuracy. My work emphasizes interpretable and resource-efficient AI models tailored for low- and middle-income healthcare settings. Research interests include data fusion, model optimization, and deploying AI on embedded systems for real-time decision support.

Beyond healthcare, I have contributed to projects in predictive analytics, intelligent transportation systems, and ICT-enabled public service delivery. As a Lecturer at Lira University and an Associate Consultant at the Uganda Management Institute, I leverage data science and digital innovation to bridge academic research with national development priorities.

Personal information



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Uganda

Education

PhD in Computer Science Student | 2018 – present

Master of Science in Computer Science | 2009 – 2014

Post Graduate Diploma in Education | 2002 – 2003

Bachelor of Science | 1996 – 1999

Uganda Advance Certificate of Education | 1994 – 1996

Uganda Certificate of Education | 1990 – 1993

Work experience

Lecturer, Department of Computer Science, Lira university: 2016 – present

Head of Department, Computer Science, Lira university: 2022 – 2024

Associate consultant, Uganda Management Institute: 2021 – 2023

Publications

- [1] N. Byenkya, L. N. Nkalubo, R. Nakibuule, and N. Okila, “Adaptive object detection in dynamic road environments using YOLOv11 with continuous learning for real-time obstacle detection,” *Discover Artificial Intelligence*, 2026. <https://link.springer.com/article/10.1007/s44163-025-00828-2>
- [2] N. Okila, A. Katumba, J. Nakatumba-Nabende, C. Mwikirize, S. Murindanyi, J. Serugunda, S. Bugeza, A. Oriekot, J. Bossa, and E. Nabawanuka, “Automated AI-based lung disease classification using point-of-care ultrasound,” *Applied AI Letters*, 2025, doi: 10.1002/ail2.70012.
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- [4] A. Katumba, S. Murindanyi, N. Okila, J. Nakatumba-Nabende, C. Mwikirize, J. Serugunda, S. Bugeza, A. Oriekot, J. Bossa, and E. Nabawanuka, “A dataset of lung ultrasound images for automated AI-based lung disease classification,” *Data in Brief*, vol. 62, p. 112034, 2025, doi: 10.1016/j.dib.2025.112034.
- [5] N. Okila, A. Katumba, J. Nakatumba-Nabende, C. Mwikirize, S. Murindanyi, J. Serugunda, S. Bugeza, A. Oriekot, J. Bossa, and E. Nabawanuka, “Deep learning for accurate B-line detection and localization in lung ultrasound imaging,” *Frontiers in Artificial Intelligence*, vol. 8, p. 1560523, 2025, doi: 10.3389/frai.2025.1560523.
- [6] N. Okila, A. Katumba, J. Nakatumba-Nabende, J. Serugunda, C. Mwikirize, S. Murindanyi, S. Bugeza, A. Oriekot, J. Bossa, and E. Nabawanuka, “Automated lung disease classification using advanced ultrasound imaging techniques,” *SSRN Preprint*, 2025, doi: 10.2139/ssrn.5030016.
- [7] L. Nkalubo, R. Nakibuule, and N. Okila, “Real-time object detection using an ensemble of one-stage and two-stage object detection models with dynamic fine-tuning using Kullback–Leibler divergence,” 2023. https://link.springer.com/chapter/10.1007/978-3-031-94439-0_8
- [8] N. Okila, “B-line Artifact Localization in Lung Ultrasound Images Using YOLOv5-Po,” presented at the Data Science Africa Conference, Arusha, Tanzania, Jul. 18–22, 2022.