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<https://scholar.google.com/citations?user=s26G8-QAAAAJ&hl=en&oi=ao>

Profile

I am always seeking to address societal challenges in the developing world driven by solutions from the computer science perspective. My research interests concern theoretical and practical aspects of artificial intelligence, in particular, computer vision and machine learning techniques in relation to solving real world problems.

A. Education/Qualification

- 2015 - 2020 PhD in Computer Science, University of Groningen, The Netherlands.
Title: [Computational intelligence & modeling of crop disease data in Africa.](#)
Award: [Best PhD thesis award of the University of Groningen Engineering Center, 2020.](#)
- 2011 - 2014 Master of Science in Computer Science, Makerere University, Uganda.
Title: Automated Vision-Based Diagnosis of Banana Bacterial Wilt Disease and Black Sigatoka Disease.
- 2007 - 2010 Bachelor of Science in Computer Science, Makerere University, Uganda.

Other trainings

- 2012 (4 weeks) Advancing Policy and Planning for E-Learning in Ugandan Teacher Training, University of the Sunshine Coast, Queensland, Australia.

B. Appointments/Duties

2021 – Present	Senior Lecturer, Department of Computer Engineering, Busitema University.
2021 - Present	Appointment as member of the Communication Policy Committee
2020 - Present	Head, Busitema Artificial Intelligence & Interdisciplinary Research Group Duties include: Building capacity for students in Machine Learning and Data Science research projects through training, seminar series among other research activities.
2015 - 2020	PhD Scholar on project titled “Automated mobile survey technology and spatial modeling of viral cassava diseases in Uganda”, Makerere University, Artificial Intelligence research lab.
2015 – 2021	Lecturer, Department of Computer Engineering, Busitema University.
2011 – 2015	Teaching Assistant, Faculty of Engineering, Busitema University.

C. Teaching experience

I teach several courses at Masters and Bachelors level as follows.

Bachelors courses

Bsc in Computer Engineering, Bsc in Electrical Engineering as well as some Diploma programs.

- Artificial Intelligence
- Systems programming (Unix Environment)
- Object Oriented Programming
- Operating Systems
- Structured programming
- Databases
- Computer Architecture

Masters course

Msc Computer Forensic program.

- Data Mining
- Digital Image Processing

D. Thesis Supervision

Main supervisor and Co-supervision of Research projects.

Masters Thesis

1. Yangisiriza Sylvia - Energy efficient Machine Learning Algorithm for malware detection in Internet of Things based on Pattern detection techniques, Makerere University, Ongoing
2. AI-Enabled Investigation in Mental Health Illness - Abura Jerome, Makerere University, Ongoing
3. Stephen Kasumba - A Semi-Supervised Approach for Cassava Disease Classification, Makerere University, Ongoing
4. Mbotto Peter - An authentication framework for mobile devices in corporate networks, Busitema University, 2022.
5. Okumu Wilfred Mayira - Development of an Investigative Process Model to Monitor E-Learning Systems, Busitema University, 2022.

Bachelor's Thesis

1. Ssaabwe Andrew Jordan et al. - Development of an Autonomous Robot Maize Disease Monitoring, Busitema University, Ongoing.
2. Omara Jonathan - Real time feedback: Case of crop diseases diagnosis application for smallholder farmers, Busitema University, 2022.
3. Inyangat Francis Xavier - Smartphone Agro-IoT Application for Smallholder Farmers, Busitema University, 2022.
4. Magazi Dan - A real-time water quality monitoring system, Busitema University, 2022.
5. Lucy Nabwire - Mobile Application For Diagnosis Of Anthracnose In Beans, Busitema University, 2019.
6. Akule Isaac - Android based vehicle tax verification system using image processing, Busitema University, 2018.
7. Wafula Elisha - Speech-Gesture translation application, Busitema University, 2017.
8. Ssenkooto Stephen - Android Messaging Application for Blind People, Busitema University, 2017.
9. Musabe Robert - Secret code based communication system over local network, Busitema University, 2017.

D. Publications (5-Selected)

More publications can be found on my Google profile:

<https://scholar.google.com/citations?user=s26G8-QAAAAJ&hl=en&oi=ao>

1. **G. Owomugisha**, F. Melchert, E. Mwebaze, J. A. Quinn and M. Biehl, "Matrix Relevance Learning From Spectral Data for Diagnosing Cassava Diseases" , in IEEE Access, vol. 9, pp. 83355-83363, 2021, doi: 10.1109/ACCESS.2021.3087231.
2. Harry Dzingai Mafukidze, **Godliver Owomugisha**, Daniel Otim, Action Nechibvute, Cloud Nyamhere, Felix Mazunga. "Adaptive Thresholding of CNN Features for Maize Leaf Disease Classification and Severity Estimation". MDPI, Applied Sciences, Volume 12, 19, pp. 8412, 2022.
<https://www.mdpi.com/2076-3417/12/17/8412>
3. **Godliver Owomugisha**, Ephraim Nuwamanya, John A. Quinn, Michael Biehl, and Ernest Mwebaze. "Early Detection of Plant Diseases Using Spectral Data". In Proceedings of the 3rd International Conference on Applications of Intelligent Systems (Las Palmas de Gran Canaria, Spain). Association for Computing Machinery, New York, NY, USA, Article 26, 6, 2020.
<https://doi.org/10.1145/3378184.3378222>
4. **Godliver Owomugisha**, Friedrich Melchert, Ernest Mwebaze, John A Quinn, Michael Biehl. "Machine Learning for diagnosis of disease in plants using spectral data". Int'l Conf. Artificial Intelligence, ICAI'18, Las Vegas, Nevada, USA, July 30-August 02, 2018.
5. **G. Owomugisha** and E. Mwebaze, "Machine Learning for Plant Disease Incidence and Severity Measurements from Leaf Images," 2016 15th IEEE International Conference on Machine Learning and Applications (ICMLA), 2016, pp. 158-163, doi: 10.1109/ICMLA.2016.0034.

F. Awards/Research grants

August, 2022 - [Artificial Intelligence for Agriculture and Food Systems Innovations Research Network](#). Title: “Scaling Smartphone-Based Tools for Early Crop Disease Detection & Monitoring” Duration: 18 months. PI - Ongoing

August, 2022 - [Data Science Africa \(DSA\) research grant](#). Title: “Development of 3-D smartphone add-on spectrometer for field-based early detection of disease”. Duration: 1 year, PI - Ongoing

July, 2022 - Erasmus+ KA171 project. The project is aimed to foster academic and research between students and staff from Busitema and Makerere University to University of Twente. Partners: University of Twente (Lead), Busitema University, Makerere University. Duration: 2022 - 2025.

June, 2022. The Royal Academy of Engineering. Title: “Advancement of Occupational Safety, Health and Environment (OSHE) Knowledge and Skills in Uganda’s Higher Educational Institutions and Industrial Sectors”. Institutions: Makerere University (Lead), Kyambogo University, Busitema University. Duration: 2022 - 2022. Role: Team Member, Busitema University hub.

July, 2021 - [Google AI for Social Good 2021](#). Title: “Adoption of smartphone agro-applications for field-based disease diagnosis and real-time feedback for smallholder farmers”. Duration: 1 year, PI - Completed

January, 2021 - [Best PhD thesis award of the University of Groningen Engineering Center, 2020](#). The thesis was selected on this criteria: Scientific quality and impact, Long term societal impact and Interdisciplinary connections.

November, 2020 - Lacuna Research Fund. Title: “Machine Learning Datasets for Crop Pest and Disease Diagnosis: Crop Imagery and Spectrometry Data”. Role: Lead Spectrometry Data - Completed

August, 2020 - [Data Science Africa \(DSA\) research grant](#). Title: “Early detection and diagnosis of crop diseases in asymptomatic plants: acquisition and machine learning analysis of spectral data”. Duration: 1 year, PI - Completed

September, 2019 - Third winner. Uganda Biotechnology and Biosafety Consortium (UBBC) 2019. Certificate of Exemplary Innovation for Developing a low-cost 3-D printed smartphone add-on spectrometer for diagnosis of crop diseases prior to visible symptoms.

G. Talks

- July 21, 2022: Data Science Africa Summer School and Workshop, Arusha, 2022
[Early Detection and Diagnosis of Crop Diseases: Acquisition and Machine Learning Analysis of Imagery and Spectral Data](#)
- February 07, 2022: AI for Social Good
Topic: *Adoption of smartphone agro-applications for field-based disease diagnosis and real-time feedback for smallholder farmers*
- July 30, 2021: Deep Learning IndabaX Uganda
Topic: *Early Disease Detection of Plant Diseases Using Spectral Data*
- July 4, 2019: AFRICA BLOCKCHAIN CONFERENCE 2019.
Topic: *Artificial Intelligence in Africa*
- Sept 27, 2016: Dutch Society of Pattern Recognition and Image Processing (nvphbv),
De Zwarte Doos, Eindhoven.
Topic: *Spectral-Based Diagnosis of Cassava Crop Diseases with Leaf Images*

Godliver CV 2022