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RESEARCH

Interests	AI · Robotics · Human-Computer Interaction · Data science · Computer Security
Areas	Artificial Intelligence · Information Systems · Cognitive Neuroscience · Computer Vision and Pattern Recognition · Developmental and Educational Psychology · Human-Computer Interaction

RESEARCH SUMMARY

42	113	5	3	2.24	17%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 42 publications listed below, 2018–2026. Field-weighted impact is the mean over the 24 works scored for it; 1.00 is the world average for works of the same field, type and year. 4 of the 24 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Senior Lecturer 2020–present
Department of Computer Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

PhD Computer Science 2016–2021
Department of Computer Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 37

1. Rectta Adetor, Emmanuel Ahene, Christian Idan Frowne, Nana Amissah Amoah, Richard Adade, Kwabena Owusu-Agyemang, **Rose-Mary Owusuaa Mensah Gyening**, Justice Owusu Agyemang, Betty Agyei Kponyo, Enoch Acheampong, Jerry John Kponyo (2026). A Domain-Specific Ghanaian Sign Language Dataset for Healthcare Communication With Baseline Benchmarks. *IEEE Access*. https://doi.org/10.1109/access.2026.3732480
2. Emmanuel Ahene, Richmond Owusu Agyei, **Rose-Mary Owusuaa Mensah Gyening**, Kwasi Adu Obirikorang, Kate Takyi, Kwabena Owusu-Agyemang, Linda Amoako-Banning, Joojo Walker (2026). A deep learning-based automated Solar-Powered Fish Monitoring System. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0351628
3. Emmanuel Ahene, Christian Idan Frowne, Rectta Adetor, Nana Amissah Amoah, Richard Adade, Kwabena Owusu-Agyemang, **Rose-Mary Owusuaa Mensah Gyening**, Justice Owusu Agyemang, Betty Agyei Kponyo, Enoch Acheampong, Jerry John Kponyo (2026). A large scale multimodal dataset for healthcare domain Ghanaian sign language translation and retrieval based synthesis. *Scientific Reports*. https://doi.org/10.1038/s41598-026-43478-9
4. Juliet Arthur, **Rose-Mary Owusuaa Mensah Gyening**, Emmanuel Ahene, Prince Dawson Tetteh, Betty Agyei Kponyo, Justice Agyemang Owusu, Kate Takyi, Jerry John Kponyo (2026). A systematic review of

machine learning techniques for real-time speech and noise classification in hearing aids. *Disability and Rehabilitation Assistive Technology*. https://doi.org/10.1080/17483107.2026.2671834

5. Linus Tabari, Kate Takyi, **Rose-Mary Owusuaa Mensah Gyening** (2026). Attention-Based LSTM for Sign Language Recognition Leveraging Spatial-Temporal Keypoint. *Computing&AI Connect*. https://doi.org/10.69709/caic.2026.130891
6. L Tabari, K Takyi, **RMOM Gyening** (2026). Attention-Based LSTM for Sign Language Recognition Leveraging Spatiotemporal Keypoints. *Computing&AI Connect*. https://www.scifiniti.com/3104-4719/3/2026.0034
7. **Rose-Mary Owusuaa Mensah Gyening**, James Ben Hayfron-Acquah, Michael Asante, Kate Takyi, Peter Appiahene (2026). Deep-fuzzy personalisation framework for robot-assisted learning for children with autism. *Indonesian Journal of Electrical Engineering and Computer Science*. https://doi.org/10.11591/ijeecs.v41.i1.pp320-330
8. Gadafi Iddrisu Balali, K Takyi, **RMOM Gyening** (2026). Enhancing Diabetes Mellitus Diagnosis and Management in Ghana through Supervised Learning: A Predictive Modeling Approach. *Journal of Health Informatics in Africa*. https://jhia-online.org/index.php/jhia/article/view/592
9. **Rose-Mary Owusuaa Mensah Gyening**, Juliet Arthur, Prince Dawson Tetteh, Felix Adu Mensah Amofah, Kelvin Ackah, Enoch Acheampong, Betty Agyei Kponyo, Justice Owusu Agyemang, Emmanuel Ahene, Vida Kasore, Jerry John Kponyo (2026). GESMA: A dataset of Ghanaian environmental soundscapes for machine learning applications. *Data in Brief*. https://doi.org/10.1016/j.dib.2026.112732
10. Enoch Acheampong, Vida Kasore, Betty Kponyo Agyei, Ros Yaw Owusu-Ansah, Jeffrey Kwame Owusu Ansah, Elizabeth Owusu-Ansah, Justice Owusu Agyemang, **Rose-Mary Owusuaa Mensah Gyening**, Emmanuel Ahene, Juliet Arthur, Jerry John Kponyo (2026). Integrating artificial intelligence into design and development of assistive technologies: user needs and preferences in Ghana. *Journal of Enabling Technologies*. https://doi.org/10.1108/jet-10-2025-0081
11. Prince Dawson Tetteh, **Rose-Mary Owusuaa Mensah Gyening**, Juliet Arthur, Justice Agyemang Owusu, Betty Agyei Kponyo, Emmanuel Ahene, Jerry John Kponyo (2026). Speech enhancement techniques for hearing aids: a systematic review. *Universal Access in the Information Society*. https://doi.org/10.1007/s10209-026-01342-7
12. Daniel Opoku, Kwabena Owusu-Agyemang, James Benjamin Hayfron-Acquah, **Rose-Mary Owusuaa Mensah Gyening** (2026). SwinCNN+OE: A Swin Transformer and CNN Architecture for Breast Histopathology Classification With OOD and Grad-CAM Integration. *IEEE Access*. https://doi.org/10.1109/access.2026.3650834
13. Niamatu Yussif, Kate Takyi, **Rose-mary Owusuaa Mensah Gyening**, Samuelson Israel Boadu-acheampong (2025). Advanced Mobile Money Fraud Detection Using CNN-BiLSTM and Optimized SGD with Momentum. *AJIT-e Academic Journal of Information Technology*. https://doi.org/10.5824/ajite.2025.03.002.x
14. Kate Takyi, **Rose-Mary Owusuaa Mensah Gyening**, Shester Msouobu Gueuwou, Marco Stanley Nyarko, Richard Adade, Reindorf Nartey Borkor, Samuelson Israel Boadu-Acheampong, Linus Tabari (2025). AfriSign: African sign languages machine translation. *Discover Artificial Intelligence*. https://doi.org/10.1007/s44163-025-00227-7
15. Mavis Sarah Gyimah, James Benjamin Hayfron -Acquah, **Rose-Mary Mensah Gyening**, Michael Asante, Umar Farouk Ibn Abdulrahman, Evans Kotei (2025). AsanteTwiSenti: A Sentiment dataset of Ghanaian Asante Twi Tweets in a multilingual context. *Data in Brief*. https://doi.org/10.1016/j.dib.2025.111460
16. Stephen Afrifa, Vijayakumar Varadarajan, Peter Appiahene, Tao Zhang, Daniel Gyamfi, **Rose-Mary Owusuaa Mensah Gyening** (2025). Deep Neural Networks for Skin Cancer Classification: Analysis of Melanoma Cancer Data. *Journal of Advances in Information Technology*. https://doi.org/10.12720/jait.16.1.1-11
17. K Takyi, **RMOM Gyening**, MA Boateng (2025). Enhancing SQL injection detection with long short term memory networks in deep learning. *International Journal of Open Information Technologies*. https://cyberleninka.ru/article/n/enhancing-sql-injection-detection-with-long-short-term-memory-networks-in-

deep-learning

18. Stephen Afrifa, Tao Zhang, Peter Appiahene, Xin Zhao, Vijayakumar Varadarajan, Thomas Atta-Darkwah, Yanzhang Geng, Daniel Gyamfi, **Rose-Mary Owusuaa Mensah Gyening** (2025). Impact of Climate Change on Groundwater Level Changes: An Evaluation Based on Deep Neural Networks. *Applied Computational Intelligence and Soft Computing*. https://doi.org/10.1155/acis/7641994

19. **Rose-Mary Owusuaa Mensah Gyening**, Michael Appiah Akoto, Kwabena Owusu-Agyemang, Linda Amoako-Banning, Kate Takyi, Peter Appiahene (2025). MeatScan: An image dataset for machine learning-based classification of fresh and spoiled cow meat. *Data in Brief*. https://doi.org/10.1016/j.dib.2025.112045

20. Sylvain Landry Birane Faye, Denis Nkweteyim, Georgette Helene Coumba Sow, Boly Diop, Fatoumata Bintou Diongue, Birane Cisse, Nsagha Dickson, Ndiaye Dia, Kingsley Badu, Gelan Ayana, … **Rose-Mary Owusuaa Mensah Gyening** and 10 others (2025). Reimagining Artificial Intelligence for zoonotic disease detection in Africa: a decolonial approach rooted in community engagement and local knowledge. *AI and Ethics*. https://doi.org/10.1007/s43681-025-00779-5

21. Alice Bagyiereyele Lakyiere, **Rose-Mary Owusuaa Gyening Mensah**, Nutifafa Yao Agbenor-Efunam, Edmund Yamba, Kingsley Badu (2025). Trends and advances in image-based mosquito identification and classification using machine learning models: A systematic review. *Computers in Biology and Medicine*. https://doi.org/10.1016/j.compbiomed.2025.110373

22. Mohammed Iddrisu, Kate Takyi, **Rose-Mary Owusuaa Mensah Gyening**, Kwame Ofosuhene Peasah, Linda Amoako Banning, Kwabena Owusu-Agyemang (2024). An improved man-in-the-middle (MITM) attack detections using convolutional neural networks. *Multidisciplinary Science Journal*. https://doi.org/10.31893/multiscience.2025129

23. Stephen Afrifa, Vijayakumar Varadarajan, Tao Zhang, Peter Appiahene, Daniel Gyamfi, **Rose-Mary Owusuaa Mensah Gyening**, Jacob Mensah, Samuel Opoku Berchie (2024). Deep learning based capsule networks for breast cancer classification using ultrasound images. *Current Cancer Reports*. https://doi.org/10.25082/ccr.2024.01.002

24. Eshun Michael, **Gyening Mensah Rose-Mary Owusuaa**, Takyi Kate, Appiahene Peter, Peasah Ofosuhene Kwame, Banning Amoako Linda (2024). Sentiment analysis and classification of Ghanaian football tweets from the 2022 FIFA World Cup. *Indonesian Journal of Electrical Engineering and Computer Science*. https://doi.org/10.11591/ijeecs.v34.i1.pp497-507

25. Lucy Afeafa Ry-Kottoh, **Rose-Mary Owusuaa Mensah Gyening**, Obed Appiah, Kate Takyi, Peter Appiahene (2023). Cocoa beans classification using enhanced image feature extraction techniques and a regularized Artificial Neural Network model. *Engineering Applications of Artificial Intelligence*. https://doi.org/10.1016/j.engappai.2023.106736

26. Isaac Aduhene Armah, James Ben Hayfron-Acquah, Kate Takyi, **Rose-Mary Owusuaa Mensah Gyening**, Michael Eshun (2023). The use of knapsack 0/1 in prioritizing software requirements and Markov chain to predict software success. *International Journal of Information Technology*. https://doi.org/10.1007/s41870-023-01476-4

27. Emmanuel Ahene, Joojo Walker, **Rose-mary Owusuaa Mensah Gyening**, Gaddafi Abdul-Salaam, James Ben Hayfron-Acquah (2022). Heterogeneous signcryption with proxy re-encryption and its application in EHR systems. *Telecommunication Systems*. https://doi.org/10.1007/s11235-022-00886-2

28. **RMOM Gyening** (2022). LightGBM-RF: A Hybrid Model for Anomaly. *Frontiers in Cyber Security: 5th International Conference, FCS 2022, Kumasi, Ghana, December 13–15, 2022, Proceedings*. https://books.google.com/books?hl=en&lr=&id=66GfEAAAQBAJ&oi=fnd&pg=PA34&dq=info:ql_NA-AeyvgJ:scholar.google.com&ots=1IIW-p8zhw&sig=PB-AaQepny7Ez8lvMwUBuhbzZpE

29. YM Missah, **RMOM Gyening** (2022). PREDICTING THE OPERATIONAL EFFICIENCY OF BANKS USING THEIR INFORMATION TECHNOLOGY: DECISION TREE ALGORITHM APPROACH. *Information Technologist*. https://www.researchgate.net/profile/Peter-Appiahene-2/publication/362284367_Predicting_the_Operational_Efficiency_of_Banks_Using_their_Information_Technology_Decision_Tree_Algorithm_Approach/links/62e134a23c0ea87887617bed/Predicting-the-Operational-Efficiency-of-Banks-Using-

their-Information-Technology-Decision-Tree-Algorithm-Approach.pdf

30. **Rose-Mary Owusuaa Mensah Gyening** (2021). A Novel Soil Moisture, Temperature and Humidity Measuring System- An IOT Approach. *Journal of Theoretical and Applied Information Technology*. https://scholar.google.com/scholar?cluster=13473304560256478354&hl=en&oi=scholarr
31. **Rose-Mary Owusuaa Mensah Gyening** (2019). Cashless Transactions: The State of Mobile Money Usage and Adoption among Tertiary Students in Kumasi Metropolis. *International Journal of Innovative Science and Research Technology (IJISRT)*.
32. **Rose-Mary Owusuaa Mensah Gyening**, JB Hayfron-Acquah (2019). Longitudinal study of interactions among Ghanaian autistic children and Rosye, a humanoid robot. *International Journal of Computer Techniques (IJCT)*.
33. **Rose-Mary Owusuaa Mensah Gyening**, JB Hayfron-Acquah (2019). RoCA: A Humanoid Robotic Assistive Technology for Children with Autism. *International Journal of Computer Engineering and Information Technology*. https://www.researchgate.net/profile/Rose-Mary-Mensah-2/publication/335740346_RoCA_A_Humanoid_Robotic_Assistive_Technology_for_Children_with_Autism/links/6023ad1a4585158939937858/RoCA-A-Humanoid-Robotic-Assistive-Technology-for-Children-with-Autism.pdf
34. **Rose-Mary Owusuaa Mensah Gyening** (2019). Solar tracking system for africa's underutilized solar power. *IRJCS:: International Research Journal of Computer Science*.
35. **Rose-Mary Owusuaa Mensah Gyening** (2018). A proposed harmonisation framework for e-commerce websites across the globe. *Int. Res. J. Eng. Technol.*. https://www.academia.edu/download/83022104/IRJET-V5I4188.pdf
36. **Rose-Mary Owusuaa Mensah Gyening**, JB Hayfron-Acquah (2018). Preliminary observations from interactions among Ghanaian autistic children and Rosye, a humanoid robotic assistive technology. *Int. J. Adv. Sci. Res. Eng.*. https://www.academia.edu/download/58012556/32983.pdf
37. **Rose-Mary Owusuaa Mensah** (2018). Social Robotic Systems in Autism Therapy: Survey and Design Considerations. *International Journal for Research in Applied Science and Engineering Technology*. https://doi.org/10.22214/ijraset.2018.5238

Book chapters 1

1. **RMOM Gyening**, E Ahene, D Agyili (2025). Design and Evaluation of a Mobile Health Platform for Improved Healthcare Delivery in Underserved Communities in Ghana. *International Conference on e-Health and Bioengineering*. https://doi.org/10.1007/978-3-032-23952-5_1

Conference papers 3

1. Abdulai Abdul-Malik Dason, **Rose-Mary Owusuaa Mensah Gyening**, Kate Takyi, Linda Amoako Banning, Eldad Antwi-Bekoe, Michael Eshun (2024). Pneumonia Detection on Chest X-ray Using Deep Convolutional Neural Networks. https://doi.org/10.1109/icecet61485.2024.10698157
2. K Takyi, MS Nyarko, Richard Adade, **RMOM Gyening** (2023). Afrisign: Machine translation for african sign languages. *4th Workshop on African Natural Language Processing*. https://openreview.net/forum?id=EHIdk3J2xk
3. Otuekong Ekpo, Kate Takyi, **Rose-Mary Owusuaa Mensah Gyening** (2022). LightGBM-RF: A Hybrid Model for Anomaly Detection in Smart Building. *Communications in computer and information science*. https://doi.org/10.1007/978-981-19-8445-7_3

Reports 1

1. Nana Ewusi-Mensah, Courage Julius Logah, John Boulard Forkuor, **Rose-Mary Owusuaa Mensah-Gyening**, Abeaku Badu Arthur, Eric Appau Asante (2024). Enhancing institutional policies and frameworks for E-learning: A case study of the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. https://doi.org/10.14507/mcf-eli.i9