Yaw Marfo Missah

Department of Computer Science
Kwame Nkrumah University of Science and Technology

ORCID 0000-0002-2926-681X · Google Scholar scholar.google.com/citations?user=YUXrEp8AAAAJ&hl=en · Profile knust.peerford.com/staff/9ba084c1-3f7f-442f-a1d2-2956316145d4

PROFILE

Yaw Marfo Missah has been with the Department of Computer Science of the Kwame Nkrumah University of Science and Technology, Ghana, since August 2013, and plays a role in the day to day activities of the Department. He is passionate about the value of computer science especially artificial intelligence (AI) thinking and the use of AI techniques to improve all aspects of life. In research, he collaborates with other scientists from engineering, meteorology, food science, and Public health experts. His passion is to make students understand the core subject of artificial intelligence and its applications. He has a number of publications in refereed journals and has published more than twenty-five (25) articles mostly in the field of artificial intelligence and its applications since 2014.

RESEARCH

Interests	Artificial Intelligence · Neural Networks · Computer Vision · Machine Learning
Areas	Artificial Intelligence · Computer Vision and Pattern Recognition · Plant Science · Information Systems · Management Science and Operations Research · Analytical Chemistry

RESEARCH SUMMARY

54	539	12	16	1.59	28%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 54 publications listed below, 2013–2026. Field-weighted impact is the mean over the 40 works scored for it; 1.00 is the world average for works of the same field, type and year. 11 of the 40 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Senior Lecturer 2013–present
Computer Science, Kwame Nkrumah University of Science and Technology, KUMASI-KNUST, Ghana

EDUCATION AND QUALIFICATIONS

PhD
Computer Science, Colorado Technical University, Colorado Springs, United States

PUBLICATIONS

Journal articles 50

1. Henry Techie Menson, Michael Asante, **Yaw Marfo Missah**, Gaddafi Abdul Salaam, Stephen Opoku Oppong (2026). A Systematic Review of Artificial Intelligence and Deep Learning Approaches for Cocoa Pod Disease Detection. *Journal of Computer Science*. https://doi.org/10.3844/jcssp.2026.2540.2572
2. G Abdul-Salaam, **YM Missah** (2026). A Two-stage Image Encryption Framework using Ensemble Learning-Driven Key Generation and Spiral Ripple Shuffling. *Journal of Advanced Research Design*. https://akademiabaru.com/submit/index.php/ard/article/view/6623
3. Steve Okyere-Gyamfi, Michael Asante, Kwame Ofosuhene Peasah, **Yaw Marfo Missah**, Vivian Akoto-

Adjepong (2026). Color Difference Histogram Capsule Network (CDH-CapsNet) for Plant Disease Recognition. *International Journal of Intelligent Systems and Applications*. https://doi.org/10.5815/ijisa.2026.03.03

4. Henry Techie-Menson, Michael Asante, **Yaw Marfo Missah**, Gaddafi Abdul-Salaam, Stephen Opoku Oppong (2026). Enhanced convolutional block attention module with Learnable Gated Fusion (LGF-CBAM) for cocoa pod disease identification. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0348147
5. Issah Zabsonre Alhassan, Gaddafi Abdul-Salaam, Michael Asante, **Yaw Marfo Missah**, Alimatu Sadia Shirazu (2026). Ensemble-Guided Pseudorandom Number Generation with Residue Number System Transformation. *Journal of Cyber Security*. https://doi.org/10.32604/jcs.2026.085303
6. G Abdul-Salaam, **YM Missah** (2025). An Overview and Comparative Study of Traditional, Chaos-Based and Machine Learning Approaches in Pseudorandom Number Generation. *Journal of Cyber Security*. https://www.researchgate.net/profile/Issah-Alhassan-5/publication/393471781_An_Overview_and_Comparative_Study_of_Traditional_Chaos-Based_and_Machine_Learning_Approaches_in_Pseudorandom_Number_Generation/links/686c3b09e4632b045dca712d/An-Overview-and-Comparative-Study-of-Traditional-Chaos-Based-and-Machine-Learning-Approaches-in-Pseudorandom-Number-Generation.pdf
7. Steve Okyere-Gyamfi, Michael Asante, Kwame Ofosuhene Peasah, **Yaw Marfo Missah**, Vivian Akoto-Adjepong (2025). Contrast limited adaptive histogram equalization (CLAHE) and colour difference histogram (CDH) feature merging capsule network (CCFMCapsNet) for complex image recognition. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0335393
8. Steve Okyere-Gyamfi, Michael Asante, **Yaw Marfo Missah**, Kwame Ofosuhene Peasah, Vivian Akoto-Adjepong (2025). DLCA-CapsNet: Dual-Lane CDH Atrous CapsNet for the Detection of Plant Diseases. *International Journal of Advanced Computer Science and Applications*. https://doi.org/10.14569/ijacsa.2025.0160764
9. Maxwell Dorgbefu Jnr, **Yaw Marfo Missah**, Najim Ussiph, Gaddafi Abdul-Salaam, Oliver Kornyo, Joseph Mawulorm Mensah (2025). Hybrid framework of differential privacy and secure multi-party computation for privacy-preserving entity resolution. *Computers & Security*. https://doi.org/10.1016/j.cose.2025.104603
10. **YM Missah** (2024). A Hybrid CNN-LSTM based natural language processing model for sentiment analysis of customer product reviews: a case study from Ghana. *Journal of Hunan University Natural Sciences*. https://www.jonuns.com/index.php/journal/article/view/1634
11. Inusah Fuseini, **Yaw Marfo Missah** (2024). A critical review of data mining in education on the levels and aspects of education. *Quality Education for All*. https://doi.org/10.1108/qea-01-2024-0006
12. Seiba Alhassan, Dr. Gaddafi Abdul-Salaam, Asante Micheal, **Yaw Marfo Missah**, Dr. Ernest D. Ganaa, Alimatu Sadia Shirazu (2024). CFS-AE: Correlation-based Feature Selection and Autoencoder for Improved Intrusion Detection System Performance. *Journal of Internet Services and Information Security*. https://doi.org/10.58346/jisis.2024.i1.007
13. John Kwao Dawson, Frimpong Twum, James Benjamin Hayfron Acquah, **Yaw Marfo Missah** (2024). Cryptographic Solutions for Data Security in Cloud Computing:. *Journal of Cyber Security and Mobility*. https://doi.org/10.13052/jcsm2245-1439.1324
14. Kwadwo Asante, **Yaw Marfo Missah**, Frimpong Twum, Michael Asante (2024). Network-centric Optimal Hybrid Sensing Hole Recovery and Self- Healing in IPV6 WSNs. *International Journal of Wireless & Mobile Networks*. https://doi.org/10.5121/ijwmn.2024.16605
15. Twum Frimpong, James Benjamin Hayfron Acquah, **Yaw Marfo Missah**, John Kwao Dawson, Ben Beklisi Kwame Ayawli, Philemon Baah, Samuel Akyeramfo Sam (2024). Securing cloud data using secret key 4 optimization algorithm (SK4OA) with a non-linearity run time trend. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0301760
16. Michael Ayitey Junior, Peter Appiahene, **Yaw Marfo Missah**, Vivian Akoto-Adjepong (2024). The use of Efficientnet_b0 network to identify COVID-19 in chest X-ray images. *Journal of Electrical Systems and Information Technology*. https://doi.org/10.1186/s43067-024-00143-3

17. Fuseini Inusah, **Yaw Marfo Missah**, Ussiph Najim, Frimpong Twum (2023). Agile neural expert system for managing basic education. *Intelligent Systems with Applications*. https://doi.org/10.1016/j.iswa.2023.200178

18. Seiba Alhassan, Gaddafi Abdul-Salaam, Michael Asante, **Yaw Missah**, Ernest Ganaa (2023). Analyzing Autoencoder-Based Intrusion Detection System Performance. *Journal of Information Security and Cybercrimes Research*. https://doi.org/10.26735/ylxb6430

19. Gaddafi Abdul-Salaam, **Y Missah** (2023). ENHANCING AUTOENCODER PERFORMANCE FOR INTRUSION DETECTION SYSTEMS VIA OPTIMAL BOTTLENECK SIZE OPTIMIZATION IN A TWO HIDDEN LAYER ARCHITECTURE. *Scientific and practical cyber security journal*. https://journal.scsa.ge/wp-content/uploads/2023/12/0002_enhancing-autoencoder-performance-for-intrusion-detection-systems-via-optimal-bottleneck-size-optimization-in-a-two-hidden-layer-architecture.pdf

20. F Twum, JBH Acquah, **Y Missah** (2023). Ensuring Data Confidentiality and Privacy in the Cloud using Non-Deterministic Cryptographic Scheme. *International journal of computer science and network security: IJCSNS*. https://scienceon.kisti.re.kr/srch/selectPORSrchArticle.do?cn=JAKO202322852774688

21. John Kwao Dawson, Frimpong Twum, James Benjamin Hayfron Acquah, **Yaw Marfo Missah** (2023). Ensuring confidentiality and privacy of cloud data using a non-deterministic cryptographic scheme. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0274628

22. John Kwao Dawson, Twum Frimpong, James Benjamin Hayfron Acquah, **Yaw Marfo Missah** (2023). Ensuring privacy and confidentiality of cloud data: A comparative analysis of diverse cryptographic solutions based on run time trend. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0290831

23. **Yaw Marfo Missah**, Fuseini Inusah, Ussiph Najim, Frimpong Twum (2023). Evaluating Agile Neural Educational System for Effective Resource Management. *SAGE Open*. https://doi.org/10.1177/21582440231214843

24. G Abdul-Salaam, **Y Missah** (2023). Hybrid Network Intrusion Detection Systems: A Systematic Review. *Sci. Pract. Cyber Secur. J.* https://journal.scsa.ge/wp-content/uploads/2023/12/0001_hybrid-network-intrusion-detection-systems-a-systematic-review.pdf

25. Fuseini Inusah, **Yaw Marfo Missah**, Ussiph Najim, Frimpong Twum (2023). Integrating expert system in managing basic education: A survey in Ghana. *International Journal of Information Management Data Insights*. https://doi.org/10.1016/j.jjimei.2023.100166

26. John Kwao Dawson, Frimpong Twum, James Benjamin Hayfron Acquah, **Yaw Marfo Missah** (2023). PRISMA Archetype-Based Systematic Literature Review of Security Algorithms in the Cloud. *Security and Communication Networks*. https://doi.org/10.1155/2023/9210803

27. Frimpong Twum, **M Missah** (2023). Reconnoitering security algorithms performance in the cloud: Systematic literature review based on the PRISMA archetype. *Journal of Theoretical and Applied Information Technology*. https://scholar.google.com/scholar?cluster=12915261970145967308&hl=en&oi=scholarr

28. David DODOO-ARHIN, Frimpong Twum, James Ben Hayfron-Acquah, **Yaw Marfo Missah** (2022). A Novel Computer Vision Model for Medicinal Plant Identification Using Log-Gabor Filters and Deep Learning Algorithms. *Computational Intelligence and Neuroscience*. https://doi.org/10.1155/2022/1189509

29. F Twum, JB Hayfron-Acquah, **YM Missah** (2022). An enhanced RSA algorithm using Gaussian interpolation formula. *International Journal of Computer Aided Engineering and Technology*. https://doi.org/10.1504/ijcaet.2022.123996

30. Frimpong Twum, Emmanuel Mawuli Lagoh, **Yaw Missah**, Najim Ussiph, Emmanuel Ahene (2022). Cold Boot Attack on Encrypted Containers for Forensic Investigations. *KSII Transactions on Internet and Information Systems*. https://doi.org/10.3837/tiis.2022.09.013

31. **YM Missah**, U Najim, F Twum (2022). Data mining and visualisation of basic educational resources for quality education. *International Journal of Engineering Trends and Technology*. https://www.researchgate.net/profile/Fuseini-Inusah/publication/366627117_Data_Mining_and_Visualisation_of_Basic_Educational_Resources_for_Quality_Education/links/63abf9f7c3c99660ebad7532/Data-Mining-and-Visualisation-of-Basic-Educational-Resources-for-

Quality-Education.pdf

32. John Kwao Dawson, Frimpong Twum, James Hayfron Acquah, **Yaw Marfo Missah** (2022). Ensuring Privacy and Confidentiality of Data on the Cloud Using an Enhanced Homomorphism Scheme. *Informatica*. https://doi.org/10.31449/inf.v46i8.4305

33. Martha T. Teye, **Yaw Marfo Missah**, Emmanuel Ahene, Twum Frimpong (2022). Evaluation of Conversational Agents: Understanding Culture, Context and Environment in Emotion Detection. *IEEE Access*. https://doi.org/10.1109/access.2022.3153787

34. Frimpong Twum, Vincent Amankona, **Yaw Marfo Missah**, Ussiph Najim, Michael Opoku (2022). Implementation of a Data Protection Model dubbed Harricent_RSECC. *International Journal of Advanced Computer Science and Applications*. https://doi.org/10.14569/ijacsa.2022.0130517

35. **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

36. Juliana Mantebea Danso, **Yaw Marfo Missah**, Enoch Opanin Gyamfi, Stephen Dankwa, Sarpong Kwabena (2022). Reseed Skipping of Linear Congruential Generator for Multi-level Image Steganography Security of Financial Data. *SN Computer Science*. https://doi.org/10.1007/s42979-022-01540-z

37. Frimpong Twum, **Yaw Marfo Missah**, Stephen Opoku Oppong, Najim Ussiph (2022). Textural Analysis for Medicinal Plants Identification Using Log Gabor Filters. *IEEE Access*. https://doi.org/10.1109/access.2022.3196788

38. Emmanuel Ahene, Mark Ofori-Oduro, Frimpong Twum, Joojo Walker, **Yaw Marfo Missah** (2021). Efficient Authentication Protocol and Its Application in Resonant Inductive Coupling Wireless Power Transfer Systems. *Sensors*. https://doi.org/10.3390/s21248245

39. Fuseini Inusah, **Yaw Marfo Missah**, Najim Ussiph, Frimpong Twum (2021). Expert System in Enhancing Efficiency in Basic Educational Management using Data Mining Techniques. *International Journal of Advanced Computer Science and Applications*. https://doi.org/10.14569/ijacsa.2021.0121148

40. Stephen Opoku Oppong, Frimpong Twum, James Ben Hayfron-Acquah, **Yaw Marfo Missah** (2021). Medicinal Plant Identification using Gabor Filters and Deep Learning Techniques: A Paper Review. *Journal of Computer Science*. https://doi.org/10.3844/jcssp.2021.1210.1221

41. Nana Kofi Ahoi Appiah-Badu, **Yaw Marfo Missah**, Leonard K. Amekudzi, Najim Ussiph, Twum Frimpong, Emmanuel Ahene (2021). Rainfall Prediction Using Machine Learning Algorithms for the Various Ecological Zones of Ghana. *IEEE Access*. https://doi.org/10.1109/access.2021.3139312

42. Peter Appiahene, **Yaw Marfo Missah**, Ussiph Najim (2020). Predicting Bank Operational Efficiency Using Machine Learning Algorithm: Comparative Study of Decision Tree, Random Forest, and Neural Networks. *Advances in Fuzzy Systems*. https://doi.org/10.1155/2020/8581202

43. Peter Appiahene, **Yaw Marfo Missah**, Ussiph Najim (2019). Evaluation of information technology impact on bank's performance: The Ghanaian experience. *International Journal of Engineering Business Management*. https://doi.org/10.1177/1847979019835337

44. **YM Missah** (2019). Predicting the operational efficiency of banks in the presence of information technology investment. *Proceedings of the International Conference on Artificial Intelligence and Soft Computing (ICAISC)*. https://scholar.google.com/scholar?cluster=10414162574170785285&hl=en&oi=scholarr

45. Owusu-Marfo, Joseph, Lulin, Zhou, **Missah, Yaw**, Asante Antwi, Henry, Kissi, Jonathan, Asare, Isaac, Banahene, Jonathan (2019). The Effect of Smart Mobile Devices Ownership and Usage on Insomnia among Health Trainees in Ghana. *Canadian Journal of Applied Science and Technology - Canadian Journal of Applied Science and Technology*.

46. Peter Appiahene, Najim Ussiph, **Yaw M Missah** (2018). Information Technology Impact on Productivity.

International Journal of Information Communication Technologies and Human Development. https://doi.org/10.4018/ijicthd.2018070104

47. Victoria Boafo, **Dr. M. Y. Missah**, Owusu Nyarko-Boateng (2017). Improving the Use of Information Systems for Hospital Management Using Balanced Scorecard Framework. *International Journal of Science and Engineering Applications*. https://doi.org/10.7753/ijsea0608.1004
48. Enoch Opanin Gyamfi, **Yaw Marfo Missah** (2017). Pixel-Based Unsupervised Classification Approach for Information Detection on Optical Markup Recognition Sheet. *Advances in Science Technology and Engineering Systems Journal*. https://doi.org/10.25046/aj020417
49. **YM Missah** (2016). Radar Signals Compression using Singular Value Decomposition (SVD) Approach. *International Journal of Computer Applications*. https://scholar.google.com/scholar?cluster=12720398460508186 01&hl=en&oi=scholarr
50. **YM Missah** (2013). Implementation of electronic medical records—a case study of an eye hospital. *South Asian Journal of Business and Management Cases*. https://doi.org/10.1177/2277977913480682

Conference papers 3

1. Stephen Opoku Oppong, Frimpong Twum, James Ben Hayfron-Acquah, **Yaw Marfo Missah** (2021). Hybrid Approach to Medicinal Plant Leaf Image Enhancement Using Contrast Limited Adaptive Histogram Equalization and Homomorphic Filter. *2021 International Conference on Electrical, Computer and Energy Technologies (ICECET)*. https://doi.org/10.1109/icecet52533.2021.9698460
2. Kwadwo Asante, Twum Frimpong, **Yaw Missah**, Michael Asante (2021). Network-Centric Optimal Hybrid Mobility Scheme for IPv6 Wireless Sensor Networks. *2021 International Conference on Electrical, Computer and Energy Technologies (ICECET)*. https://doi.org/10.1109/icecet52533.2021.9698636
3. Peter Appiahene, **Yaw Marfo Missah** (2019). Bank Classification Algorithm: Case Study of Ghanaian Banks. https://doi.org/10.1109/iccspn46366.2019.9150171

Theses 1

1. **YM Missah** (2017). An enhanced triple data encryption standard (TDES) algorithm to secure health level seven (HL7) data transfer. *MS thesis, Kwame Nkrumah Univ. Sci. Technol., Kumasi, Ghana*. https://www.academia.edu/download/93128397/IRJET-V3I1003.pdf