Charles Roland Haruna

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RESEARCH

Interests	AI in Big Data management · Database management systems and · SQL similarity metrics
Areas	Artificial Intelligence · Information Systems · Management Science and Operations Research · Computer Networks and Communications · Electrical and Electronic Engineering · Sociology and Political Science

RESEARCH SUMMARY

35	124	6	3	0.31	0%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 35 publications listed below, 2018–2026. Field-weighted impact is the mean over the 23 works scored for it; 1.00 is the world average for works of the same field, type and year. 0 of the 23 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer/Dr 2021–present
Computer Science and Information Technology, University of Cape Coast, Cape Coast, Ghana

PUBLICATIONS

Journal articles 20

1. **Charles R. Haruna**, Maame G. Asante-Mensah, Abdul- Lateef Yussif, Gideon J. Aidoo, Tudzi K. Kafui, Joshua A. Simpson (2026). A Hybrid Tourism Recommendation System with Modified Similarity and Weighted Popularity Scores. *American International Journal of Computer Science and Technology*. https://doi.org/10.63282/3117-5481/aijcst-v8i1p102
2. **Charles Roland Haruna**, Edmund Ofei Ayeh, Maame Gyamfua Asante-Mensah, Obed Tettey Nartey, Kwame Opuni-Boachie Obour Agyekum, Pius Kwao Gadosey (2026). Certified Adversarial Robustness in Deep Learning Via Differential Privacy and Ensemble Training. *International journal of research and scientific innovation*. https://doi.org/10.51244/ijrsi.2026.1305000026
3. **Charles Roland Haruna**, Maame Gyamfua Asante-Mensah, Kwadwo Sarbeng-Baafi, Sandro Kwame Amofa (2026). Comparative Analysis of Machine Learning and Deep Learning Models for Real-Time Driver Drowsiness Detection. *International Journal of Latest Technology in Engineering Management & Applied Science*. https://doi.org/10.51583/ijltemas.2026.150600239
4. **Charles Roland Haruna** (2026). Crisis Informatics and Applied Social Media Mining: End-to-End Multi-Stage ML Pipeline. *International Journal of Computer Science and Information Security (IJCSIS),*. https://www.academia.edu/download/125734538/01112555_IJCSIS_Camera_Ready.pdf
5. **Charles R. Haruna**, Maame G. Asante-Mensah, Festus S. Doe, Sandro K. Amofa (2026). Data Privacy and Utility Trade-Off: An Efficient K-Anonymization Algorithm with Low Information Loss. *International Journal of Latest Technology in Engineering Management & Applied Science*. https://doi.org/10.51583/ijltemas.2026.150400063
6. Francisca Adoma Acheampong, KOBO Agyekum, **Charles Roland Haruna** (2026). Efficient D2D resource

allocation with temporal fusion transformer. *Journal of Communications and Networks*. https://ieeexplore.ieee.org/abstract/document/11659816/

7. Daniel Asare Kyei, Alimatu Saadia-Yussiff, Maame G. Asante-Mensah, Abdul Lateef-Yussiff, **Charles Roland Haruna**, Derry Emmanuel (2026). Novel Dynamic Batch-Sensitive Adam Optimiser for Vehicular Accident Injury Severity Prediction. *Iraqi Journal for Computer Science and Mathematics*. https://doi.org/10.52866/2788-7421.1420
8. Mends Albert, MG Asante-Mensah, AS Yussiff, **CR Haruna**, Sandro Amofa (2025). Dual branch CNN with attention model using an Adaptive Multi-scale Edge Aware Feature. *International Journal of Computer Science and Information Security (IJCSIS)*. https://www.academia.edu/download/125734013/01122561_IJCSIS_Camera_Ready.pdf
9. **Charles Roland Haruna**, Maame G. Asante-Mensah (2025). Making AI Accessible: Evaluating YOLOv5n for Real-Time Object Detection in Low-Light Environments on CPU-Only Devices. *International Journal of Computer Science and Information Security*.
10. Felix Kwame Kumedzro, **Charles Roland Haruna**, Emmanuel Arthur-Nyarko (2025). Perceived prospects of extended reality in improving efficacy for teaching and learning among students with hearing impairment at Cape Coast School for the Deaf, Ghana. *International Journal of Education and Development using Information and Communication Technology*. https://eric.ed.gov/?id=EJ1488752
11. Lawrence Papa Nii Otoo, **Charles Roland Haruna**, Barbie Eghan-Yartel, Festus Anyan, Prince Oduro, Kingsley Dauda Okrah, John Agbenyo, Godfred Tieku Asiamah (2024). Beyond Paperwork: Automating University of Cape Coast Housing Allocation. *Developing Country Studies*. https://doi.org/10.7176/dcs/9-1-09
12. **& Haruna** (2024). Identification of cucumber and courgette vegetables using texture and shape image features. *Journal of the Ghana Science Association*.
13. Michael Y. Kpiebaareh, Wei-Ping Wu, Brighter Agyemang, **Charles R. Haruna**, Tandoh Lawrence (2022). A Generic Graph-Based Method for Flexible Aspect-Opinion Analysis of Complex Product Customer Feedback. *Information*. https://doi.org/10.3390/info13030118
14. Lawrence Ephrim, Augustine Kofi Blewudzi, Hamza Umar, **Charles Roland Haruna**, Alexander Asante (2022). Class Attendance System using Wi-Fi Direct. *International Journal of Computer Applications*. https://doi.org/10.5120/ijca2022921929
15. **Charles Roland Haruna**, Elliot Attipoe, Isaac Armah Mensah, Kwame Opuni-Boachie Obour Agyekum (2022). Using Random Scheduling Technique with Crowd-Sourcing to Solve Exam Timetable. *International Journal of Computer Applications*. https://doi.org/10.5120/ijca2022921928
16. Tandoh Lawrence, Fagen Li, Ikram Ali, **Charles R. Haruna**, Michael Y. Kpiebaareh, Tandoh Christopher (2021). A computationally efficient HMAC-based authentication scheme for network coding. *Telecommunication Systems*. https://doi.org/10.1007/s11235-021-00842-6
17. Tandoh Lawrence, Fagen Li, Ikram Ali, Michael Y. Kpiebaareh, **Charles R. Haruna**, Tandoh Christopher (2021). An HMAC-based authentication scheme for network coding with support for error correction and rogue node identification. *Journal of Systems Architecture*. https://doi.org/10.1016/j.sysarc.2021.102051
18. **Charles Roland Haruna** (2021). Deep inverse reinforcement learning for structural evolution of small molecules. *Briefings in Bioinformatics*. https://academic.oup.com/bib/article-abstract/22/4/bbaa364/6043289
19. **Charles Roland Haruna**, Mengshu Hou, Rui Xi, Moses Jojo Eghan, Michael Y. Kpiebaareh, lawrence Tandoh, Barbie Eghan-Yartel, Maame G. Asante-Mensah (2019). Applying Cluster Refinement to Improve Crowd-Based Data Duplicate Detection Approach. *IEEE Access*. https://doi.org/10.1109/access.2019.2920667
20. **Charles R Haruna** (2018). Deep dilation on multimodality time series for human activity recognition. *IEEE Access*. https://ieeexplore.ieee.org/abstract/document/8467310/

Book chapters 3

1. **Charles Roland Haruna**, Maame Gyamfua Asante-Mensah, Michael Ashun, Nyamekesse Samuel, Benedict Jojo Afful, Boamah Charles Ofosu Ofori (2026). Utilising AI to Enhance Customer Experience in Tourism and Hospitality in Ghana. *Artificial Intelligence in Hospitality and Tourism in Africa*. https://doi.org/10.1108/978-1-80686-169-920261010
2. **Charles R. Haruna**, MengShu Hou, Moses J. Eghan, Michael Y. Kpiebaareh, Lawrence Tandoh (2019). An Effective and Cost-Based Framework for a Qualitative Hybrid Data Deduplication. *Advances in intelligent systems and computing*. https://doi.org/10.1007/978-981-13-6861-5_44
3. **Charles R Haruna** (2019). User-connection behaviour analysis in service management using bipartite labelled property graph. *Proceedings of the 16th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services*. https://doi.org/10.1145/3360774.3360813

Conference papers 11

1. Elliot Kojo Attipoe, **Charles Roland Haruna**, Johnson Logodzo (2026). A Comparative Study of Machine Learning Algorithms for Predicting High-School Student Performance. *Lecture notes in networks and systems*. https://doi.org/10.1007/978-3-032-19678-1_30
2. **Charles Roland Haruna**, Sandro Kwame Amofa, Maame Gyamfua Asante-Mensah, Stephen Julius Atsu (2026). Hybrid Indexing Strategies for Query Optimization in ROLAP Systems: A Performance Evaluation of Composite, Bitmap, and Zone Map Indexing. *Lecture notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*. https://doi.org/10.1007/978-3-032-33957-7_27
3. Evans Ankomah, **Charles Roland Haruna**, Francis Xavier Kofi Akotoye, Brighter Agyemang, Kwame Opuni-Boachie Obour Agyekum, Alexander Asante, Lawrence Ephrim, Alexander N. T. Kissiedu (2022). A Comparative Analysis of Security Features and Concerns in NoSQL Databases. *Communications in computer and information science*. https://doi.org/10.1007/978-981-19-8445-7_22
4. Sandro Amofa, Jianbin Gao, Maame Gyamfua Asante-Mensah, **Charles Roland Haruna**, Xia Qi (2022). Blockchain-Based Patient-to-Patient Health Data Sharing. *Communications in computer and information science*. https://doi.org/10.1007/978-981-19-8445-7_13
5. Yunbo Rao, Obed Tettey Nartey, Shaoning Zeng, Kingsley Nketiah Acheampong, **Charles Roland Haruna**, Jianxun Sun (2022). LeFUNet: UNet with Learnable Feature Connections for Teeth Identification and Segmentation in Dental Panoramic X-ray Images. *2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*. https://doi.org/10.1109/bibm55620.2022.9995297
6. Lawrence Tandoh, Fagen Li, Ikram Ali, **Charles Roland Haruna**, Michael Y. Kpiebaareh, Christopher Tandoh (2022). Requirements for Total Resistance to Pollution Attacks in HMAC-Based Authentication Schemes for Network Coding. *Communications in computer and information science*. https://doi.org/10.1007/978-981-19-0523-0_12
7. Michael Y. Kpiebaareh, Wei-ping Wu, **Charles R. Haruna**, Lawrence Tandoh, Brighter Agyemang (2021). A Graph-Based Opinion Mining Approach for Reducing Information Loss and Overload in Product Reviews Analysis. https://doi.org/10.1145/3456529.3456561
8. **Charles Roland Haruna**, Jian Yang, Meng Shu Hou, Lei Gou, Shu Huan Fan, Barbie Eghan-Yartel (2021). Incorporating Knowledge Bases and Databases to an Effective Repair of Data Errors. https://doi.org/10.1145/3456529.3456536
9. **Charles R. Haruna**, Mengshu Hou, Moses J. Eghan, Michael Y. Kpiebaareh, Lawrence Tandoh (2018). A Hybrid Data Deduplication Approach in Entity Resolution Using Chromatic Correlation Clustering. *Communications in computer and information science*. https://doi.org/10.1007/978-981-13-3095-7_12
10. **Charles R. Haruna**, MengShu Hou, Moses J. Eghan, Michael Y. Kpiebaareh, Lawrence Tandoh, Barbie Eghan-Yartel, Maame G. Asante-Mensah (2018). Cost-Based and Effective Human-Machine Based Data Deduplication Model in Entity Reconciliation. https://doi.org/10.1109/icsai.2018.8599375
11. **Charles Roland Haruna**, B Eghan-Yartel (2018). User-Transition Behavior Analysis in Data Publication Using Bipartite Graph. *2018 4th International Conference on Big Data Computing and Communications (BIGCOM)*. https://ieeexplore.ieee.org/abstract/document/8488621/

Reports 1

1. **Charles Roland Haruna** (2022). Frontiers in Cyber Security: 5th International Conference, FCS 2022, Kumasi, Ghana, December 13–15, 2022, Proceedings. *Springer Nature*. https://books.google.com/books?hl=en&lr=&id=66GfEAAAQBAJ&oi=fnd&pg=PR5&dq=info:kuyB1EevT0UJ:scholar.google.com&ots=1IIWUpfCfx&sig=hZgflsu5wYm3cZ9UgorUrI1IH08