Kwame Opuni-Boachie Obour Agyekum

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RESEARCH

Interests	Cybersecurity · Next Generation Networks · IoT Blockchain
Areas	Electrical and Electronic Engineering · Computer Networks and Communications · Artificial Intelligence · Information Systems · Atomic and Molecular Physics, and Optics · Civil and Structural Engineering

RESEARCH SUMMARY

41	912	12	12	1.86	24%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 41 publications listed below, 2013–2026. Field-weighted impact is the mean over the 25 works scored for it; 1.00 is the world average for works of the same field, type and year. 6 of the 25 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer 2021–present
Telecommunication Engineering, Kwame Nkrumah University of Science and Technology College of Engineering, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

Ph.D. 2017–2021
Center for Cyber Security, School of Computer Science and Engineering, University of Electronic Science and Technology of China, Chengdu, China

DISTINCTIONS, MEMBERSHIPS AND SERVICE

IEEE
New York, United States

PUBLICATIONS

Journal articles 34

1. Emmanuel Atebawone, **Kwame Opuni-Boachie Obour Agyekum**, James Dzisi Gadze, Kwasi Adu-Boahen Opare, Owusu Agyeman Antwi, Robert Akromond (2026). A RIS-Programmable hybrid uplink for grant-Free NOMA networks with distributed signal aggregation. *Physical Communication*. https://doi.org/10.1016/j.phycom.2026.103047
2. Kenneth Coker, She Kun, Joseph Roger Arhin, **Kwame Opuni-Boachie Obour Agyekum** (2026). All-optical phase modulation via the optical Stark effect in a 2D hybrid organic-inorganic perovskite polaritonic interferometer. *Optics Communications*. https://doi.org/10.1016/j.optcom.2026.133420
3. Kwame Omono Asamoah, Michael Adjeisah, Peter Darko Adjei, Patrick Kwabena Mensah, **Kwame Opuni-Boachie Obour Agyekum**, Seth Larweh Kodjiku, Esther Stacy E.B. Aggrey (2026). Analyzing user satisfaction in e-learning platforms: A text mining and explainable machine learning approach using unstructured data. *Applied Soft Computing*. https://doi.org/10.1016/j.asoc.2026.115450

4. Emmanuel Atebawone, **Kwame Opuni-Boachie Obour Agyekum**, James Dzisi Gadze, Kwasi Adu-Boahen Opare, Owusu Agyeman Antwi, Robert Akromond (2026). CA-PPO: Collision-Aware Reinforcement Learning for Grant-Free NOMA in Wireless Federated Learning. *IET Networks*. https://doi.org/10.1049/ntw2.70028
5. 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
6. Emmanuel Atebawone, **Kwame Oponi-Boachie Obour Agyekum**, James Dzisi Gadze, Kwasi Adu-Boahen Opare, Owusu Agyeman Antwi, Robert Akromond (2026). Collision-Aware Optimization Framework for Wireless Federated Learning Over Grant-Free NOMA. *Wireless Personal Communications*. https://doi.org/10.1007/s11277-026-12129-7
7. Emmanuel Atebawone, **Kwame Opuni-Boachie Obour Agyekum**, James Dzisi Gadze, Kwasi Adu-Boahen Opare, Owusu Agyeman Antwi, Robert Akromond (2026). Communication-Security Co-Design for Federated Learning in Grant-Free NOMA IoT Networks. *IET Communications*. https://doi.org/10.1049/cmu2.70138
8. 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/
9. KAB Opare, JAD GADZE, **K AGYEKUM** (2025). A HEURISTIC K-MEANS-BASED UNSUPERVISED MACHINE LEARNING MODEL FOR UNMANNED AERIAL VEHICLE MOUNTED RECONFIGURABLE INTELLIGENT SURFACE FOR ENHANCED 5G AND BEYOND NETWORKS PERFORMANCE. *International Journal of Computer Applications*. https://scholar.google.com/scholar?cluster=18279579895761036071&hl=en&oi=scholarr
10. Simon Atuah Asakipaam, Jerry John Kponyo, Kwame Oteng Gyasi, Justice Owusu Agyemang, Kingsford Sarkodie Obeng Kwakye, **Kwame Opuni-Boachie Obour Agyekum** (2025). Adaptive Resource Management Framework for Profit Optimisation in 5G Network Slicing. *IET Networks*. https://doi.org/10.1049/ntw2.70018
11. Kwaku Kwarteng, Kwame O. Gyasi, Justice O. Agyemang, **Kwame Agyekum**, Kingsford Kwakye, Ellis M. Sani, Emmanuel A. Ampomah, Kusi A. Bonsu (2025). Cat Swarm Optimization with Lévy Flight for Link Load Balancing in SDN. *Journal of Telecommunications and Information Technology*. https://doi.org/10.26636/jtit.2025.1.1773
12. Robert Antwi, James Dzisi Gadze, Eric Tutu Tchao, Axel Sikora, **Kwame Opuni-Boachie Obour Agyekum**, Henry Nunoo-Mensah, Andrew Selasi Agbemenu, Justice Owusu Agyemang, Dominik Welte, Abdul-Rahman Ahmed, Eliel Keelson (2025). Optimising peer-to-peer topology for blockchain-based industrial internet of things networks using particle swarm optimisation. *Cluster Computing*. https://doi.org/10.1007/s10586-024-04917-2
13. Kenneth Coker, Chuyuan Zheng, Joseph Roger Arhin, **Kwame Opuni-Boachie Obour Agyekum**, Wei Li Zhang (2024). Control of Polaritonic Coupler Using Optical Stark Effect in 2D Hybrid Organic-Inorganic Perovskite Microcavity. *IEEE Journal of Quantum Electronics*. https://doi.org/10.1109/jqe.2024.3441613
14. Linda Delali Fiasam, Yunbo Rao, Collins Sey, Stacy E.B. Aggrey, Seth Larweh Kodjiku, **Kwame Opuni-Boachie Obour Agyekum**, Annicet Razafindratovolahy, Isaac Adjei-Mensah, Chiagoziem Chima Ukwuoma, Francis Sam (2024). DAW-FA: Domain-aware adaptive weighting with fine-grain attention for unsupervised MRI harmonization. *Journal of King Saud University - Computer and Information Sciences*. https://doi.org/10.1016/j.jksuci.2024.102157
15. Jehoiada Jackson, **Kwame Obour Agyekum**, kwabena Sarpong, Chiagoziem Ukwuoma, Rutherford Patamia, Zhiguang Qin (2024). Hazy to hazy free: A comprehensive survey of multi-image, single-image, and CNN-based algorithms for dehazing. *Computer Science Review*. https://doi.org/10.1016/j.cosrev.2024.100669
16. Priscilla Oyeladun Ajiboye, **Kwame Opuni-Boachie Obour Agyekum**, Emmanuel Asuming Frimpong

(2024). Privacy and security of advanced metering infrastructure (AMI) data and network: a comprehensive review. *Journal of Engineering and Applied Science*. https://doi.org/10.1186/s44147-024-00422-w

17. **Kwame Opuni-Boachie Obour Agyekum**, Alex Yaw Boakye, Benedict Appati, Jochebed Akoto Opoku, Justice Owusu Agyemang, Gordon Owusu Boateng, James Dzisi Gadze (2024). Resource Allocation in D2D-Enabled 5G Networks Using Multiagent Reinforcement Learning. *Journal of Computer Networks and Communications*. https://doi.org/10.1155/2024/2780845
18. Dennis Agyemanh Nana Gookyi, Fortunatus Aabangbio Wulnye, Ewura Abena Essanoah Arthur, Roger Kwao Ahiadormey, Justice Owusu Agyemang, **Kwame Opuni-Boachie Obour Agyekum**, Raymond Gyaang (2024). TinyML for smart agriculture: Comparative analysis of TinyML platforms and practical deployment for maize leaf disease identification. *Smart Agricultural Technology*. https://doi.org/10.1016/j.atech.2024.100490
19. Daniel Kuyoli Ngala, Kwasi Adu-Boahen Opare, Emmanuel Ampoma Affum, Kwame Oteng Gyasi, **Kwame Opuni-Boachie Obour Agyekum** (2023). A greedy algorithm for pilot contamination mitigation using LAP. *Journal of Engineering and Applied Science*. https://doi.org/10.1186/s44147-023-00239-z
20. Kenneth Coker, Chuyuan 楚媛 Zheng 郑, Joseph Roger Arhin, **Kwame Opuni-Boachie Obour Agyekum**, Weili 伟利 Zhang 张 (2023). Exciton–polaritons in a 2D hybrid organic–inorganic perovskite microcavity with the presence of optical Stark effect. *Chinese Physics B*. https://doi.org/10.1088/1674-1056/ad1484
21. Robert Antwi, James Dzisi Gadze, Eric Tutu Tchao, Axel Sikora, Henry Nunoo-Mensah, Andrew Selasi Agbemenu, **Kwame Opunie-Boachie Obour Agyekum**, Justice Owusu Agyemang, Dominik Welte, Eliel Keelson (2022). A Survey on Network Optimization Techniques for Blockchain Systems. *Algorithms*. https://doi.org/10.3390/a15060193
22. 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
23. **KOBO Agyekum** (2021). A blockchain approach to ensuring provenance to outsourced cloud data in a sharing ecosystem. *IEEE Systems Journal*. https://ieeexplore.ieee.org/abstract/document/9405789/
24. **KOBO Agyekum** (2021). A proxy re-encryption approach to secure data sharing in the internet of things based on blockchain. *IEEE Systems Journal*. https://ieeexplore.ieee.org/document/9442931/
25. **KOBO Agyekum** (2021). Selective sharing of outsourced encrypted data in cloud environments. *IEEE Internet of Things Journal*. https://ieeexplore.ieee.org/abstract/document/9383775/
26. **KOB Obour Agyekum** (2020). A fully secure KP-ABE scheme on prime-order bilinear groups through selective techniques. *Security and Communication Networks*. https://doi.org/10.1155/2020/8869057
27. **KOB Obour Agyekum** (2020). An ECDSA approach to access control in knowledge management systems using blockchain. *Information*. https://www.mdpi.com/2078-2489/11/2/111
28. **KOBO Agyekum** (2019). A blockchain-SDN-enabled Internet of vehicles environment for fog computing and 5G networks. *IEEE Internet of Things Journal*. https://ieeexplore.ieee.org/abstract/document/8915702/
29. **KOB Obour Agyekum** (2019). A secured proxy-based data sharing module in IoT environments using blockchain. *Sensors*. https://www.mdpi.com/1424-8220/19/5/1235
30. **KOBO Agyekum** (2019). Secured fine-grained selective access to outsourced cloud data in IoT environments. *IEEE Internet of Things Journal*. https://ieeexplore.ieee.org/abstract/document/8839054/
31. **KOBO Agyekum**, Sandro Amofa (2018). Chain-based big data access control infrastructure. *The Journal of Supercomputing*. https://doi.org/10.1007/s11227-018-2308-7
32. **K Agyekum**, ET Tchao (2013). Customer experience with mobile number portability implementation in ghana. *International Journal of Emerging Technology and Advanced Engineering*. https://www.academia.edu/download/43261876/Customer_Experience_with_Mobile_Number_P20160302-17441-qosubs.pdf
33. E. T.Tchao, W. K. Ofosu, K. Diawuo, E. Affum, **Kwame Agyekum** (2013). Interference Simulation and

Measurements for a Deployed 4G-WiMAX Network in an Urban Sub-Saharan African Environment. *International Journal of Computer Applications*. https://doi.org/10.5120/12424-8973

34. E. Affum, E.T. Tchao, K. Diawuo, **K. Agyekum** (2013). Wideband Parameters Analysis and Validation for Indoor radio Channel at 60/70/80GHz for Gigabit Wireless Communication employing Isotropic, Horn and Omni directional Antenna. *International Journal of Advanced Computer Science and Applications*. https://doi.org/10.14569/ijacsa.2013.040638

Book chapters 2

1. **KOBO Agyekum** (2019). Digital media copyright and content protection using IPFS and blockchain. *International Conference on Image and Graphics*. https://doi.org/10.1007/978-3-030-34113-8_23
2. **KOB Obour Agyekum** (2018). Ambiguity Function Analysis of Frequency Diverse Array Radar Receivers. *Science and Information Conference*. https://doi.org/10.1007/978-3-030-01177-2_39

Conference papers 5

1. Benedict Appati, Obed Kwasi Somuah, Seidu Abdul, Nicholas Korblah Tali, Justice Owusu Agyemang, **Kwame Opuni-Boachie Obour Agyekum** (2026). Real-Time IIoT Data Integrity via Zero-Knowledge Proofs and Signature Aggregation. *Lecture notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*. https://doi.org/10.1007/978-3-032-33957-7_25
2. Ewura Abena Essanoah Arthur, Fortunatus Aabangbio Wulnye, Dennis Agyemanh Nana Gookyi, **Kwame Opuni-Boachie Obour Agyekum**, Paul Danquah, Raymond Gyaang (2024). Edge Impulse vs TensorFlow: A Comparative Analysis of TinyML Platforms for Maize Leaf Disease Identification. https://doi.org/10.1109/ictas59620.2024.10507119
3. Kenneth Coker, Chuyuan Zheng, Joseph Roger Arhin, **Kwame Opuni-Boachie Obour Agyekum**, Wei Li Zhang (2024). Manipulation of Polaritonic Interferometer in Two-Dimensional Hybrid Organic-Inorganic Perovskite Microcavity. https://doi.org/10.1109/iceet65156.2024.10913590
4. 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
5. **KOBO Agyekum** (2020). Blockchain-Based Outsourced Privacy-Preserving Support Vector Machine Classification on IoT Data. *2020 IEEE 20th International Conference on Communication Technology (ICCT)*. https://ieeexplore.ieee.org/abstract/document/9295734/