Eric Opoku Osei

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PROFILE

Dr Eric Opoku Osei is a Lecturer in Computer Science at KNUST, Ghana, and an Educational Technology Consultant. His work operates at the convergence of computers, education and security: Educational Technology | AI Ethics | Learning Analytics | Behavioral Cybersecurity with machine learning as the focal method. His research spans four areas:

Educational Technology — adoption analytics across Learning Management Systems and mobile learning platforms in African higher education contexts.

AI Ethics — Bias, Accountability, Privacy and Transparency (BAPT) in the design and implementation of generative AI or intelligent systems for the education sector.

Learning Analytics — Machine Learning and Explainable AI methods applied to educational data, to detect learning difficulties early, flag dropout risk, and predict student success.

Behavioural Cybersecurity — Security Analytics, Education, Training and Awareness (SETA): a human-centred approach to cybersecurity in low-digital-literacy contexts, with findings feeding into how cybersecurity engineers redesign and implement behavioural protocols to reduce human error in attacks. His work appears in EdTech journals such as Education and Information Technologies, as well as in journals on Behavioural cybersecurity.

He translates research into policy and practice. As Lead Consultant and Author, he developed four UNESCO-commissioned teacher professional development manuals for Ghana's Ministry of Education on ICT competency. He has produced TVET policy briefs with Plan International Ghana, secured funding as Principal Investigator from UNESCO Ghana, and served as Co-Investigator on projects including KReF and other funding agencies. He has contributed to three UNESCO consultancies and represented Ghana at a UNESCO co-creation workshop in Dakar. He reviews for Information Processing and Management (Elsevier).

For three years, he served as Director of Engineering Innovation and Technology Transfer at KNUST's Technology Consultancy Centre (TCC-CIMET), a UNESCO Category II Centre, leading digital transformation and the commercialisation of research. He now sits on KNUST's Intellectual Property and Research Commercialisation Advisory Board, established under the university's strategic plan as it pursues its shift from excellence to eminence as Africa's foremost science and technology institution.

He has supervised four (4) PhD, six (6) MPhil students, and over thirty (30) MSc and undergraduate students to completion, and teaches cloud architecture and security, IT project management, computing ethics, and information systems at the undergraduate and postgraduate levels. His conviction: computer science earns its value when it addresses problems that matter to the African development agenda, as framed by the African Union and SDGs 4 and 9.

| LinkedIn Page: www.linkedin.com/in/eric-opoku-osei |

| Google Scholar Page: https://tinyurl.com/EO-OSEI |

| KNUST Page: https://tinyurl.com/EOOSEI26 |

| Research Gate Page: https://tinyurl.com/EOO-RGATE21 |

| Scopus Page: https://tinyurl.com/EO-SCOPUS26 |

| Web of Science page: https://tinyurl.com/EOSEI-WOS26 |

RESEARCH

Areas: Education · Information Systems · Artificial Intelligence · Communication · Computer Science Applications · Control and Systems Engineering

RESEARCH SUMMARY

16	20	3	1	0.61	7%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 16 publications listed below, 2024–2026. Field-weighted impact is the mean over the 15 works scored for it; 1.00 is the world average for works of the same field, type and year. 1 of the 15 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer 2021–present
Computer Science, Kwame Nkrumah Unievristy of Science and Technology, Kumasi, Ghana

Instructional Technologist (Deputy Director) 2019–2020
ICT Directorate, Ghana Ministry of Education, Accra, Ghana

Assistant Lecturer 2015–2019
University of Ghana, Accra, Ghana

Radio & Transmission Network Engineer 2006–2014
Network Group, MTN Ghana, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

PGDE Educational Technology 2018–2020
Department of Education, University of Cape Town, Rondebosch, South Africa

PhD Computer Science 2015–2019
Department of Computer Science, Kwame Nkrumah University of Science and Technology College of Science, Kumasi, Ghana

MPhil Information Technology 2011–2013
Department of Computer Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

DISTINCTIONS, MEMBERSHIPS AND SERVICE

Innovator Award (Falling Walls) 2017–present
Ghana Office, GERMAN DAAD, Accra, Ghana

IEEE Computer Society 2015–present
Washington, United States

PUBLICATIONS

Journal articles 15

1. Samuel Odoom, **Eric Opoku Osei**, Enock Quansah Effah, Victoria Boafo, Seyram Dusu, Anthony Kweku Appiah (2026). A 3-tier machine learning framework for early detection of learning difficulties in basic school settings. *Discover Global Society*. https://doi.org/10.1007/s44282-026-00378-7
2. Luciana Ama Gbemu, Winston Kwame Abroampa, **Eric Opoku Osei** (2026). Assessing ICT competencies of early childhood teachers in the global south using the TPACK framework. *Discover Education*. https://doi.org/10.1007/s44217-026-01767-5

3. Cosmos Kwaku Nutakor, **Eric O. Osei**, Patrick Swanzy (2026). Assessing ICT integration in civic education: Barriers, enablers and practitioner perspectives in Ghana. *International Journal of Educational Development*. https://doi.org/10.1016/j.ijedudev.2026.103627
4. Cosmos Kwaku Nutakor, **Eric Opoku Osei**, Patrick Swanzy (2026). Educational technology integration in civic education delivery across limited resource environments in Ghana. *Discover Education*. https://doi.org/10.1007/s44217-026-01978-w
5. Cosmos K Nutakor, **Eric Opoku Osei**, Patrick Swanzy (2026). ICT Integration Extent in Ghana's Civic Education Delivery Explained Through the Civic Education Technology Adoption Framework. *Journal of Information Technology Education Innovations in Practice*. https://doi.org/10.28945/5780
6. Samuel Odoom, **Eric Opoku Osei**, Enock Quansah Effah, Amiru Bakariwie, Ahmed Adams Rufai (2026). Intelligent profiling beyond grades using a stacking ensemble framework for student success prediction. *Discover Education*. https://doi.org/10.1007/s44217-026-01277-4
7. Daniel Kwasi Kovor, **Eric Opoku Osei** (2026). Multi-scenario evaluation of federated learning for privacy-preserving malaria prediction with Ghana DHS data. *PLOS Digital Health*. https://doi.org/10.1371/journal.pdig.0001581
8. Daniel Amadiok, Winston Kwame Abroampa, **Eric Opoku Osei** (2025). Correlates of factors on students' use behavior of E-learning management systems in Ghanaian Public Universities. *Education and Information Technologies*. https://doi.org/10.1007/s10639-025-13544-2
9. Evans Obu, Michael Asante, **Eric Opoku Osei** (2025). Fog computing-enabled smart seating systems: optimizing latency and network bandwidth efficiency in classrooms. *Advances in Computing and Engineering*. https://doi.org/10.21622/ace.2025.05.1.1335
10. Cosmos Kwaku Nutakor, **Eric Osei Opoku**, Patrick Swanzy (2025). Global Perspectives on ICT in Civic Education: A Systematic Review of Research from 2006 to 2024. *Journal Of ICT In Education*. https://doi.org/10.37134/jictie.vol12.2.3.2025
11. Issah Baako, **Eric Opoku Osei**, Winston Kwame Abroampa (2025). Mapping the Landscape of ICT Integration in Education: A Systematic review of Literature. *Indonesian Journal of Education and Social Sciences*. https://doi.org/10.56916/ijess.v4i2.1096
12. Samuel Odoom -, **Eric Opoku Osei -** (2024). An Optimal Random Forest Model for Enhancing Decision-Making in Improving Students' Performance via Educational Data Mining. *International Journal For Multidisciplinary Research*. https://doi.org/10.36948/ijfmr.2024.v06i01.11584
13. Oliver Kornyo, Benjamin Tei Partey, Michael Asante, Kwabena Owusu-Agyemang, **Eric Osei Opoku**, William Asiedu, Prince Clement Addo, Maxwell Dorgbefu, Jesse Damptey, Siddique Abubakr Muntaka (2024). Enhancing AMI network security with STI model: A mathematical perspective. *Internet of Things*. https://doi.org/10.1016/j.iot.2024.101244
14. Enock Quansah Effah, **Eric Opoku Osei**, Maxwell Dorgbefu Jnr., Abraham Tetteh (2024). Hybrid Approach to Classification of DDoS Attacks on a Computer Network Infrastructure. *Asian Journal of Research in Computer Science*. https://doi.org/10.9734/ajrcos/2024/v17i4428
15. Daniel Amadiok, Winston Kwame Abroampa, **Eric Opoku Osei** (2024). Students' Use Behaviors of E-Learning Management Systems in Ghanaian Public Universities: What do the demographics say? *Global Journal of Transformative Education*. https://doi.org/10.14434/gjte.v4i1.36683

Theses 1

1. Agyemang, Ebenezer, **Opoku Osei, Eric** (2026). Federated Learning Enables Privacy-Preserving Cross-Border Malaria Surveillance. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.18722519