

CURRICULUM VITAE (CV)

Full name: Obed Appiah **Sex:** Male
Date of birth: 3rd April, 1981 **Marital Status:** Married
Place of birth: Bogoso **Region:** Western
Country: Ghana **Nationality:** Ghanaian
Religion: Christianity **Profession:** Computer Scientist
Languages Spoken: English and Akan **Address:** P. O. Box 72, Bogoso
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googlescholar: <https://scholar.google.com/citations?user=LmjBw1QAAAAJ>
dblp: <https://dblp.org/pid/270/7441.html>

ACADEMIC QUALIFICATION

Degree	Date
PhD Computer Science, Kwame Nkrumah University of Science and Technology	2021
MPhil Computer Science, Kwame Nkrumah University of Science and Technology,	2013
BSc Computer Science, Kwame Nkrumah University of Science and Technology,	2005
SSSCE, Prempeh College, Kumasi	1999

OTHER PROFESSIONAL QUALIFICATION

Certificate in System Modeling with Unified Modeling Language (UML)	2017
Big Data Specialist with IBM BigInsights V2.1	2016

AREA OF SPECIALTY

Algorithms, Image Processing, Robotics, Programming, and Artificial Intelligence

RESEARCH INTEREST

Computational cost (space and time) analyses of algorithms, Image, processing for Computer Vision application, Content Based Image Retrieval CBIR, Industry 4.0, Internet of Things (IoT), Machine Learning for prediction, Open Sources Platforms, Expert Systems

EMPLOYMENT RECORDS & POSITIONS HELD/HOLD

November 2000 – September 2001

Computer Lab Assistant
Boa Amponsem Senior High School Computer Laboratory (Dunkwa –on- Offin)
Teaching basic and intermediate IT skills

August 2005 – October 2005

System Administrator/IT Teacher
Boa Amponsem Senior High School (Dunkwa-on-Offin)
Teaching IT and maintaining school's administration network.

November 2005 – August 2006 (National Service Scheme)

System Administrator
Upper Denkyira District ICT Centre (Dunkwa-on-Offin)
I was responsible for managing District's Local Area Network (LAN) and Internet connection.

August 2006 to April 2010

MIS Officer
Wasa Amenfi East Mutual Health Insurance Scheme (Wasa Akropong)
I was responsible for maintaining Scheme's database, network and developing software to prepare reports as the need arises.

PROFESSIONAL / TEACHING EXPERIENCE /RESEARCH EXPERIENCE

September 2010 to 2014

Tutor (Part time)
BlueCrest College (Formerly NIIT University College)
Courses: Data Structures and algorithm, Digital Systems, Microprocessor, Network Computing and Web Application Project.

February 2013 to 2014

Lecturer (Part time)
Christian Service University College (CSUC) – Kumasi
Course: Programming with Visual Basic.Net

February 2013 to 2014

Lecturer (Part time)
Garden City University College (GCUC) – Kumasi
Courses: Database Management Systems, and Web Development Technologies

September 2014 to September 2016:

Assistant Lecturer (Full time)
Department of Computer Science and Informatics, University of Energy and Natural Resources,
Sunyani

October 2016 to date:

Lecturer/Senior Lecturer – Department of Computer Science and Informatics, University of Energy
and Natural Resources, Sunyani

September 2022 to date:

Scientific Software Developer (PPeDMaS Project) – Competent Center – West African Science
Service Centre on Climate Change and Adapted Land Use (WASCAL)

SELECTED COURSES TAUGHT:

Object Oriented Programming, Robotics, Data Structures, Principles of Programming, Data Structures, Database Systems, Programming with Visual Basic .Net, Formal Methods and Models, Mobile Computing, Electronic Commerce, Computer Graphics, Information Theory and Application, and Speech Technology

POSITIONS HELD

(2017 to 2020)

- Department of Computer Science and Informatics Exams Officer

(2015 to 2017)

- Department of Computer Science and Informatics Industrial Attachment Coordinator

ASSOCIATIONS/AFFILIATIONS (CONTRIBUTION & CURRENT POSITION):

- Ghana Association of Science

RESEARCH EXPERIENCE

Selected undergraduate (BSc. Computer Science) Project under my Supervision in UENR **Project Title**

- Identity Fraud: Exeat verification system based on barcode
- Online Bus ticket reservation system for intercity transportation in Ghana
- Case Study: Hospitals in Sunyani, Brong Ahafo
- Design of an efficient online lecturer's assessment system
- Android based academic record management system
- Design and implementation of a web based internship management system
- Android-Based pregnancy help desk
- Referral Alert System with decision support function

Research Ongoing and Completed

- i. Design and implementation of improved image pre-processing for Computer Vision application (2014 – 2020)
- ii. Design and construction of Ultrasonic based road traffic information acquisition devices for developing countries (2019)
 - The team designed and constructed road traffic information acquisition device that estimates the state of road traffic congestion. The system was an improved version of existing method. Again, it was relatively cheaper and operated with less amount of energy.

Journal Publications

1. **APPIAH, O., QUAYSON, E., & OPOKU, E.** (2020). Ultrasonic sensor based traffic information acquisition system; a cheaper alternative for ITS application in developing countries. *Scientific African*. <https://doi.org/10.1016/j.sciaf.2020.e00487>
2. **Appiah, O., Hayfron-Acquah, J. B., & Asante, M.** (2020). An Effective Algorithm for Denoising Salt-And-Pepper Noise in Real-Time. *Asian Journal of Research in Computer Science*. <https://doi.org/10.9734/ajrcos/2020/v6i130149>
3. **Appiah, O., Asante, M., & Hayfron-Acquah, J. B.** (2020). Improved approximated median filter algorithm for real-time computer vision applications. *Journal of King Saud University - Computer and Information Sciences*. <https://doi.org/10.1016/j.jksuci.2020.04.005>

4. **Appiah, O.**, & Hayfron-Acquah, J. Ben. (2018). Fast Generation of Image's Histogram Using Approximation Technique for Image Processing Algorithms. *International Journal of Image, Graphics and Signal Processing*. <https://doi.org/10.5815/ijigsp.2018.03.04>
5. **Appiah, O** & Hayfron-Acquah, J. Ben. (2017). A Robust Median-based Background Updating Algorithm. *International Journal of Image, Graphics and Signal Processing*. <https://doi.org/10.5815/ijigsp.2017.02.01>
6. **Appiah, O.**, Asante, M., & Hayfron-Acquah, J. B. (2016). Adaptive Approximated Median Filtering Algorithm for Impulse Noise Reduction. *Asian Journal of Mathematics and Computer Research*, 12 (2), 134144.
7. Bipembi, H., Hayfron-Acquah, J.B., Panford, J. K., **Appiah, O.** Calculation of Body Mass Index using Image Processing Techniques. *International Journal of Artificial Intelligence and Mechatronics* Volume 4, Issue 1, ISSN 2320 – 5121, 2015.
8. **Appiah, O.**, Martey, E. M. Magnetic Bubble Sort Algorithm. *International Journal of Computer Applications* (0975 – 8887) Volume 122 – No.21, July 2015.
9. Hayfron-Acquah, J. B., **Appiah, O.**, Riverson, K. Improved Selection Sort Algorithm. *International Journal of Computer Applications* (0975 – 8887) Volume 110 – No. 5, January 2015.
10. K Adu, PK Mensah, MA Ayidzoe, **O Appiah**, E Quayson, CB Ninfaakang, GC3558: An open-source annotated dataset of Ghana currency images for classification modelling, *Data in Brief* 45, 108616 2022
11. M Ayitey Junior, P Appiahene, **O Appiah**, Forex market forecasting with two-layer stacked Long Short-Term Memory neural network (LSTM) and correlation analysis *Journal of Electrical Systems and Information Technology* 9 (1), 1-24 1 2022
12. P Aazagreyir¹, P Appiahene, **O Appiah**, S Boateng, Gis-Based Fuzzy Multi-Criteria Decision Making Methods: A Systematic Review And Meta-Analysis, *Journal Of Theoretical And Applied Information Technology* 100 (14) 2022
13. P Aazagreyir, P Appiahene, **O Appiah**, S Boateng, An integrated fuzzy-VIKOR-DEMATEL-TOPSIS technique for assessing QoS factors of SOA, 2022
14. E M Martey, H Lei, X Li, **O Appiah**, Effective Image Representation using Double Colour Histograms for Content-Based Image Retrieval *Informatica* 45 (7) 2 2021
15. EM Martey, H Lei, X Li, **O Appiah**, Image Representation Using Stacked Colour Histogram Algorithms 14 (8), 228 3 2021
16. NS Awarayi, **O Appiah**, BA Weyori, CB Ninfaakang ,A Digital Image Watermarking Using Dwt and L-shaped Tromino Fractal Encryption *International Journal of Image, Graphics and Signal Processing* 13 (3), 33-43 2 2021

Conference/Seminars and Workshops at which papers were read

1. **Appiah, O.**, Hayfron-Acquah, J. B., & Asante, M. (2019). Real-Time Motion Detection and Surveillance using Approximation of Image Pre-processing Algorithms. In *IEEE AFRICON Conference*. <https://doi.org/10.1109/AFRICON46755.2019.9133920>

2. **Appiah, O.**, Martey, E. M., & Quayson, E. (2019). Effect of Window's Shape on Median Filtering. In IEEE AFRICON Conference. <https://doi.org/10.1109/AFRICON46755.2019.9133733>
3. **O Appiah**, EM Martey, CB Ninfaakanga, MA Agangiba, Content-Based Image Retrieval Framework for Classification of Cocoa Beans, 2021 IEEE 8th International Conference on Adaptive Science and Technology ... 2021
4. **O Appiah**, EM Martey, CB Ninfaakanga, NS Awarayi, E Opoku, Performance Evaluation of Corrupted QR Code Scanners 2021 IEEE 8th International Conference on Adaptive Science and Technology ... 2021
5. EM Martey, H Lei, X Li, **O Appiah**, NS Awarayi, Evaluation of RGB Quantization Schemes on Histogram-Based Content Based Image Retrieval International Conference on Artificial Intelligence and Security, 736-747 2 2021

Other Publications:

Thesis

1. **Obed Appiah**. (2020). Approximation Techniques for Reducing Running Time of Image Pre-Processing Algorithms. PhD. Thesis Kwame Nkrumah University of Science and Technology, Ghana.
2. **Obed Appiah**. (2013). Computerized detection of periodicity in human heart beats. MPhil. Thesis Kwame Nkrumah University of Science and Technology, Ghana.

Chapter in a Book

- Martey Ezekiel Mensah, Xiaoyu Li, Hang Lei, **Obed Appiah**, Ninfaakanga Christopher BombieSun, X., Wang, J., & Bertino, E. (Eds.). (2020). Improving Performance of Colour-Histogram-Based CBIR Using Bin Matching for Similarity Measure. Artificial Intelligence and Security. Lecture Notes in Computer Science. doi:10.1007/978-3-030-57884-8

Community Services in 2021-2022:

Activity	Year
Member of MSc, MPhil and PhD in Information Technology Curriculum Development	2021
Member of Departmental Books and Publication Committee	2021
Head of Computer Science Unit (Department of Computer Science and Informatics)	2021
IT Advisor for A3 Trusted Consult Ltd	2021
IT Advisor for Dormaa West District Assembly	2021

Departmental Post Graduate Programme Coordinator	2021
Member of Research and Grant Committee Department of Computer Science and Informatics	2021
Academic Board's Rep on Industrial Attachment Committee	2021
Member, School of Sciences Postgraduate Committee	2021
Member, LIBRARY COMMITTEE	2021

REFEREES

1. Prof. F. A. Adekoya
University of Energy and Natural Resources
Sunyani
0546169166
2. Prof. Benjamin Acquah-Hayfron
Computer Science Department
Kwame Nkrumah University of Science and Technology (KNUST)
Kumasi
0244506372
3. Prof. M. Asante
Computer Science Department
Kwame Nkrumah University of Science and Technology (KNUST)
Kumasi