CURRICULUM VITAE
MATHIAS AGBEKO

DATE OF BIRTH: 17TH JANUARY, 1987
MARITAL STATUS: MARRIED
NATIONALITY: GHANAIAN
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LANGUAGES SPOKEN AND/OR WRITTEN: English, Twi and Ewe

AREAS OF EXPERTISE OR PROFESSIONAL SKILLS

A Computer Scientist with specialization in Cryptography, Data Security, IoT Security and Emerging Technologies in Education. I have thirteen years teaching experience at the tertiary level and I lecture courses like Ethics and Security in IT, Data Communication and Computer Networking, Management Information Systems and Computer Applications in Education at both the undergraduate and postgraduate level. I am currently a Chief Examiner for the Institute of Teacher Education and Continuous Professional Development and External Assessor for teacher colleges affiliated to the University of Education, Winneba. Am currently working on encryption algorithms to ensure data security in IoT devices using deep learning. Willing to conduct world-class research and add to the body of knowledge in academia. Also, to apply my skills towards the improvement of the institution's current and future educational system with the aim of enabling the institution to stay ahead of the competition.

Computing Skills:
  i.   Programming Languages: Python, C++, Visual Basic.NET, SQL, and HTML.
  ii. Operating Systems: Windows OS, Linux OS.
  iii. Applications: Cisco Packet Tracer, AI tools, Cyberchef and Dreamweaver.

SUMMARY OF PROFILE

- Dedicated, resourceful and goal-driven educator with a solid commitment to the social and academic growth and development of every student.
- Superior interpersonal and communication skills to foster meaningful relationships with students and staff.
- An accommodating and versatile individual with the talent to develop inspiring hands-on lessons that will capture a student's imagination and breed success.
- Aptitude to remain flexible, ensuring that all student's learning styles and abilities are addressed.

PROFESSIONAL QUALIFICATIONS

- Mendeley Training Certification of Achievement, Mendeley, Ghana. (11th February – 13th March, 2025)
- Cisco Certified Network Associate (CCNA), GIMPA, Ghana.   (July – October 2016)
- Certified Information Systems Auditor (CISA), AITI-KACE, Ghana.   (March – June 2013)
- Diploma in Financial Management, ICM, UK.   (January – June 2009)

EDUCATION

Ph.D. Computer Applications, Chandigarh University, India.   (January 2022 – Date)

Postgraduate Diploma in Teaching and Learning in Higher Education (PGDTLHE), University of Education, Winneba.   (June 2015 – June 2016)

MSc. Computer Science, Sikkim Manipal University, India.   (April 2011 – May 2013)

BSc. Computer Science (Hons), Kwame Nkrumah University of Science and Technology, Kumasi.   (Sept. 2006 - July 2010)

S.S.S.C.E Certificate, St. Peter's Senior Secondary School, Nkwatia.   (Sept. 2002 – July 2005)

B.E.C.E Certificate, Universal Junior Secondary School, Koforidua.   (Sept. 1999 – April 2002)

CAREER HISTORY

Lecturer, University of Education, Winneba.   (August 2014 - Date)
Duties:
- Prepare and deliver lectures, tutorials and practical classes in ICT (face-to-face and online).
- Supervision of undergraduate long essay.
- Development of course materials, scheme of work and lesson plans on MOODLE.
- Conduct research in areas of interest.
- Set examination papers, assess and write examination reports for examiner's review.
- Provide guidance and counseling to students.
- Supervision of student-teachers on internship.

Courses Taught

Course	Title Level
Introduction to Computer Networks	Undergraduate
Advanced Computer Networks	Undergraduate
Ethics and Security in IT	Undergraduate
Emerging Technologies in Education	Undergraduate
Introduction to ICT	Undergraduate
Laboratory Management, PC Maintenance & Troubleshooting	Undergraduate
Management Information System	Undergraduate
Computer Applications in Teacher Education (Distance mode)	Postgraduate

Online Courseware Development (Distance mode)   Postgraduate

Examination Officer   (August 2023 – Date)
Duties:
- ➢ Submit to the examination coordinator a list of examination materials needed by the department for examination.
- ➢ Print examination questions.
- ➢ Coordinate all examination within the department.
- ➢ Assign invigilators to all examination rooms.
- ➢ Assign assessment sheets online to examiners for the entering of students marks.
- ➢ Ensure up-to-date academic records of students.
- ➢ Compile a comprehensive summary of departmental results for departmental and faculty examination board meeting.

Chief Examiner & External Assessor, Institute of Teacher Education and Continuous Professional Development (ITECPD), Ghana.   (April 2024 – Date)
Duties:
- ➢ Supervise the construction of ICT standard test items for Colleges of Education.
- ➢ Moderate all test items constructed.
- ➢ Ensure the integrity and confidentiality of all test items constructed.
- ➢ Ensure marking schemes are drawn for all test items constructed.
- ➢ Vet all marked written examination scripts during conference marking.
- ➢ Assess the promotion documents of college tutors for their suitability to the next rank.

Lecturer, Accra Institute of Technology, Accra.   (September 2013 – August 2014)
Duties: **Academic**
- ➢ Prepare and deliver lectures, tutorials and practical classes in Systems Programming, Mobile Computing and Information Technology.
- ➢ Supervision of undergraduate project/thesis.
- ➢ Set examination papers, assess and write examination reports for examiner's review.

   Administrative
- ➢ Assist in the design and implementation of institution's timetable.
- ➢ Conduct seminars and presentations for student internship placements.
- ➢ Coordinate Capstone projects for the Advance School of Science and Data Studies (ASSDAS)
- ➢ Supports the examinations unit to upload students grades onto LEMASS.

National Service (Births and Deaths Registry- ICT Dept.), Koforidua.   (Oct. 2010 – Aug. 2011)
Duties involved:
- ➢ Analyzing, scanning and verifying data.
- ➢ Monitoring and troubleshooting Local Area Network.
- ➢ Monitoring and maintaining data analysis software (FormStorm).
- ➢ Sorting, grouping and printing births and deaths certificates.

Internship, Networking Assistant, Electricity Company of Ghana, Koforidua.　　(June – Aug. 2007)

Duties involved:
- ➢ Configuring Local Area Network.
- ➢ Repair faulty computers.
- ➢ Rectifying out-of-sight links at their pre-paid substation.
- ➢ Maintaining and monitoring network performance.

Pupil Teacher, Assemblies of God J.H.S., Koforidua.　　(September 2005 - August 2006)

Duties:
- ➢ Taught English Language and Religious and Moral Education in J.H.S 1 and 2.
- ➢ Prepared lesson notes and maintained student records.

Achievements:
- ➢ Assisted and prepared final year students to pass their B.E.C.E exams.
- ➢ Led a group of students to win an interschool poetry and music competition.

PUBLICATIONS AND RESEARCH CONDUCTED
a. Chapters in Books

1. Agbeko, M., & Achulo, S. S. S. (2022). *Introduction to Information and Communication Technology.*
2. Agbeko, M., Anyanful, V. K., & Oppong, S. O. (2022). *Multimedia Development and Use for Early Grade.*
3. Appianing, J., Agbeko, M., & Oppong, S. O. (2022). *ICT: Educational and Instructional Technologies.*

b. Peer-Reviewed Journal Articles

1. Agbeko, M., Handa, D. (2025). Deep learning-based sensitive data detection with optimization-enabled secure encryption model for data privacy preservation in IoT. *Journal of Intelligent Systems and Internet of Things. Vol. 16(2), 142-157.* https://doi.org/10.54216/JISIoT.160211

2. Ahatsi, E., Agbeko, M., & Hanson, G. (2023). Technologies and Business practices of mobile network service providers in Ghana. *International Journal of Computer Applications*, *Vol. 185*(18), 1-7.

3. Essah, R., Kaur A., Agbeko M. (2022). A bibliometric review and future directions in Cloud Architecture and Security in Web of Science from 2008 to 2022. *Computer Integrated Manufacuring System, Vol. 28(12),* 2184-2210.

4. Ghansah, B., Benuwa, B. B., Essel, D. D., Sarkodie, A. P., & Agbeko, M. (2022). A Review of Non-Linear Kalman Filtering for Target Tracking. *International Journal of Data Analytics*

(IJDA), *3*(1), 1-25.

5. Soni, D., Srivastava D., Essah R., Dwivedi J., Agbeko M., Singh G. (2022). A Review on Disease Detection in Plant, Leaf and Fruit Using Image Processing Technique. *Industrial Engineering Journal, 15(10),* 371-378.

6. Oppong, S. O., Baah, E. K., Agbeko, M., & Terkper, J. N. (2021). Improved Botnet Attack Detection Using Principal Component Analysis and Ensemble Voting Algorithm. In *2021 International Conference on Computing, Computational Modelling and Applications (ICCMA)* (pp. 33-38). IEEE.

7. Agbeko, M. (2021). Understanding cyber safety behavior among teenagers in Ghana. *International Journal of Computer Science and Information Security*, *Vol. 19*(6), http://doi.org/10.5281/zenodo.5111963

8. Sarpong, N. A., & Agbeko, M. (2020). Optimizing Technology in Mobile Financial Services: User Experiences and Expectations in Ghana. *International Journal of Computer Applications*, *Vol. 177*(39), 1-7. http://doi.org/10.5120/ijca2020919716

9. Gyimah, E., Dake, D. K., & Agbeko, M. (2018). The Role of Computer Games in the Learning of Programming among Tertiary Students in Ghana. *African Journal of Applied Research (AJAR)*, *4*(2), 242-252. http://doi.org/10.26437/ajar.04.02.2018.21

10. Kwaa-Aidoo, E. K., & Agbeko, M. (2018). Leveraging Mobile Technologies for enhanced learning in the contemporary higher educational environment. *Journal of Science Education and Research*, *Vol. 4*(1), 1-10.

11. Agbeko, M., & Kwaa-Aidoo, E. K. (2018). An Exploration of the cyber bullying phenomenon among teenagers in Southern Ghana. *African Journal of Applied Research*, *Vol. 4*(2), 119-129. http://doi.org/10.26437/ajar.04.02.2018.10

12. Kwaa-Aidoo, E. K., & Agbeko, M. (2018). Self-Disclosure in Young People: A study of social undergraduate students in a Ghanaian university. *African Journal of Educational Studies in Mathematics and Science*, *Vol. 14*, 139-152.

13. Kwaa-Aidoo, E. K., & Agbeko, M. (2018). An Information Security Analysis of a University: The case of a Ghanaian university. *International Journal of Information Security Science*, *Vol. 7*(2), 90-99.

PROFESSIONAL DEVELOPMENT
Training Sessions:
1. The State-of-the-Art in scientific writing and publication organized by VREF. (11th February – 13th March, 2025)

2. IBM Training Workshop on Cyber Security, University of Ghana, Legon. (13th – 17th July, 2015)
3. IBM Training Workshop on Big Data   University of Ghana, Legon.   (1st – 5th June, 2015)
4. Workshop on Quality Assurance   UEW, Winneba.   (15th April, 2015)
5. Courseware development on MOODLE   UEW, Winneba.   (16th – 20th March, 2015)
6. Workshop on Academic Counseling   UEW, Winneba.   (17th November, 2014)

Seminars and Workshops:
1. Responsible AI for Generative Models organized by the Department of ICT Education, Winneba.   (26th March, 2025)
2. SUI Onboarding Workshop: Discover SUI and the basics of Blockchain organized by the Department of ICT Education, Winneba.   (9th April, 2025)
3. Retreat on curriculum development and capacity building organized by the Department of ICT Education, Winneba at Elmina Beach Resort, Elmina.   (23rd – 26th June, 2022)
4. ITECPD Course Outline writers retreat to synchronize and upgrade postgraduate programmes. Organised by ITECPD at Coconut Groove Hotel, Elmina.   (14th – 19th October, 2021)
5. Team Lead for ICT on Workshop for Colleges of Education Tutors on Test Item Construction and Writing. Organized by ITECPD, UEW in Kumasi.   (12th – 16th July, 2021)
6. Reviewer workshop for Centre Coordinators and Lecturers on the M.Ed. Mentorship program. Organized by ITECPD, UEW.   (11th – 13th January, 2021)
7. Departmental Seminar Presentation. University of Education, Winneba. (25th October, 2017)
   Paper Presented: An information security analysis of a Ghanaian university – The case of UEW.
8. Action Research workshop. Organized by Gender Mainstream, UEW. (12th – 28th Jan.,2016)

Conferences:
1. 2021 International Conference on Computing, Computational Modeling and Applications (ICCMA), Brest, France.   (15th – 16th July 2021)
   Paper presented (virtual): Improved Botnet Attack Detection Using Principal Component Analysis and Ensemble Voting Algorithm.
2. International Virtual Conference - Re-imagining tertiary education delivery in COVID-19 pandemic era and beyond: The role of ICT. Organized by IERIS, DITS, DICTE – UEW
   (18th - 19th May, 2021)
3. WABER Conference on Academic Writing and Publication.
   British Council, Accra.   (3rd July, 2018)
4. 2016 International Conference on Advanced Trends in ICT and Management, Accra.
   Paper presented: The role of programming in the learning of computer games among tertiary students in Ghana.   (28th – 29th April, 2016)

CURRICULUM DEVELOPMENT

1. Curriculum design for 1-YR M.Sc. Cyber Security and Digital Forensics programme. It is a new program the department of ICT Education wants to run. We were tasked to develop the entire course structure and content for the programme. I was the team leader for that team tasked to develop the programme within two months.   (June-July, 2022)

2. Curriculum design for 4-YR BSc. Cyber Security and Digital Forensics. It is a new program the department of ICT Education wants to run. We were tasked to develop the entire four-year course structure and content for the programme. I developed it with Dr. Ephrem Kwaa-Aidoo, Dr. Ben-Bright Benuwa and Dr. Stephen Opoku Oppong.   (Dec. 2020 – May, 2021)

3. Review of the Introduction to ICT module for first year distance learning students. We were tasked to develop a revised version and add additional contents to reflect the guidelines from NACCA. Developed with Mr. Skido Achulo.   (July 2020 – Dec. 2020)

4. Development of the Multimedia module for Basic Education students on the distance mode. This is a new course introduced by NACCA. So as experts in the field, we were tasked to develop a complete module to be used by the Basic Education as well as Early childhood education first year students. I developed it with Mr. Victor Anyanful and Mr. Stephen Opoku Oppong.   (March 2021 – June 2021)

5. Review of the Computer Applications in Teacher Education module for M.Ed. Mentorship students. This is a module used by the postgraduate distance learning students. The information was outdated so we were assigned to update the whole content and make it more relevant to reflect current trends in our time. I developed it with Dr. Ephrem Kwaa-Aidoo and Dr. Joseph Appianing.   (May 2021 – June 2021)

STUDENT DEVELOPMENT

a. Academic Counsellor for Dept. of ICT Education students   (2016 – Date)
   (i) 2016/2017 academic year: guided and mentored students and met them twice a semester throughout the academic year.
   (ii) 2017/2018 academic year: guided and mentored 156 students and met them twice a semester throughout the academic year.
   (iii) 2018/2019 academic year: guided and mentored 186 students and met them twice a semester throughout the academic year.
   (iv) 2019/2020 academic year: provided counseling especially on academic issues and the effective management of time during the COVID-19 period to 258 students.
   (v) 2020/2021 academic year: guided and mentored 311 students.
   (vi) 2021/2022 academic year: guided and mentored 368 students and met them twice a semester throughout the academic year.

(vii) 2022/2023 academic year: guided and mentored 405 Level 400 students and met them twice a semester throughout the academic year.

(viii) 2023/2024 academic year: guided and mentored 525 Level 400 students and met them twice a semester throughout the academic year.

(ix) 2024/2025 academic year: guided and mentored 368 Level 300 students and met them twice a semester throughout the academic year.

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

1. Institute of ICT Professionals, Ghana (Member)   (February 2021 – Date)
2. ISACA, Ghana Chapter (Member)   (April 2016 – Date)
3. International Association for Engineering and Technology (Member)   (Dec. 2020 – Date)
4. University Teachers Association of Ghana (Member)   (August 2014 – Date)

INSTITUTIONAL SERVICE

1. National service and internship placement committee (Member)   (May 2025 – Date)
2. Departmental welfare committee (Secretary)   (August 2018 – Date)
3. Departmental retreat planning committee (Secretary)   (Aug. 2018 – Date)
4. Course Coordinator (ICT Programmes – CODeL)   (Aug. 2018 – July 2023)
5. Departmental research coordinator   (Aug. 2018 – July 2019)

COMMUNITY SERVICE

1. Maintenance trainer for LDC facilities in Central Region.   (May, 2019 – Date)
2. Takes the lead in evangelism in my religious denomination.   (July 2002 – Date)
3. Congregation secretary in my religious denomination.   (July 2018 – Date)
4. Regular speaker on cyber security and online safety on Radio Windybay   (Mar. 2025 – Date)

RESEARCH INTERESTS

1. Cryptography
2. Information Systems Security
3. Cyber Security
4. Network Security
5. Emerging Technologies in ICT Education

AWARDS/ACHIEVEMENTS

1. Ghana Government Scholarship, St. Peter's Secondary School. August 2003 – August 2005.
2. Cocoa Marketing Board Scholarship, St. Peter's Secondary School. August 2003 – August 2005.
3. Overall Best Student, Universal Junior Secondary School - 1998. Awarded by Hon. Yaw Barima (MP, New Juaben South).

INTEREST
Reading, listening to news, surfing the internet.

REFEREES

Dr. Disha Handa	Dr. Ben-Bright Benuwa	Dr. Ephrem K. Kwaa-Aidoo
Associate Professor	Senior Lecturer	Senior Lecturer
Dept. of Computer Applications	Dept. of ICT Education	Dept. of ICT Education.
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