

Emmanuel Adjei Domfeh

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PROFILE

I am a technology and Computer Science enthusiast interested in Human-Centered AI, Machine Learning, and real-world challenges. I am also interested in Human-Centered AI, Machine Learning, and Human-Computer Interactions, and how ethics must be considered while implementing AI systems. With a Bachelor and Masters in Computer Science, I want to join forces with like-minded people to apply current computer principles to real-world challenges, especially in Africa, through research and innovation as well as impart knowledge on the upcoming generation

EDUCATION

- **MPhil Computer Science-GPA (3.44)**

Department of Computer Science and Informatics

University of Energy and Natural Resources, Sunyani

OCTOBER, 2018 — FEBRUARY, 2021

I studied courses ranging from Advanced Research Methods, Machine Learning, Advanced Data Structures, Advanced Operations Research, etc. My postgraduate thesis focused on the Performance Analysis and Evaluation of Machine Learning Models in Breast Cancer Detection. I have successfully defended my dissertation and duly graduated. It is a thesis-based Master of Philosophy

- **Bachelor of Science, Computer Science-GPA (3.17)**

Department of Computer Science and Informatics

University of Energy and Natural Resources, Sunyani

OCTOBER, 2013 — JULY, 2017

I graduated with Second Class Upper Honors in BSc Computer Science. Courses Studied include Advanced Database Systems, Principles of Programming, Programming with C++, Programming with Java, Programming with VB.NET I/II, Internet Computing, Artificial Intelligence, E-Commerce, Mobile Application Development, Computer Organization and Architecture, Software Engineering etc.

Final Project work: Application of Fuzzy Analytic Hierarchy Process Multi-Criteria Decision-Making System for Determining the Best Site Location for Underground Dams

RESEARCH PUBLICATIONS

Afrifa, Stephen, Vijayakumar Varadarajan, Peter Appiahene, Tao Zhang, and Emmanuel Adjei Domfeh. 2023. "Ensemble Machine Learning Techniques for Accurate and

Efficient Detection of Botnet Attacks in Connected Computers" *Eng* 4, no. 1: 650-664. <https://doi.org/10.3390/eng4010039>

Nimbe, P., Weyori, B. A., Mensah, J., Amponsah, A. A., Adekoya, A. F., & Adjei Domfeh, E. (2022). Quantum Blockchain: A Systematic Review. In M. Shrivastava, K. Hiran, A. Bhansali, & R. Doshi (Ed.), *Advancements in Quantum Blockchain With Real-Time Applications* (pp. 1-35). IGI Global. <https://doi.org/10.4018/978-1-6684-5072-7.ch001>

Nimbe, Peter & Yeng, Prosper & Okyere, Eric & Weyori, Benjamin & Adekoya, Adebayo & Appiahene, Peter & Nyarko-Boateng, Owusu & Nti, Isaac & Boateng, Samuel & Patrick, Mensah & Umar Bawah, Faiza & Awarayi, Nicodemus & Akoto-Adjepong, Vivian & Agbedanu, Promise & Ayidzoe, Mighty & Mensah, Jacob & Adjei Domfeh, Emmanuel. (2022). Innovative Approaches to Classical and Quantum Reflected Binary Code Generation using Pascal Triangle, Reversible N-Input C-Gate and Reversible N-Input Q-Gate. *Journal of Algebraic Statistics*. 13. 4708-4734.

RESEARCH PUBLICATIONS UNDER REVIEW

Adjei Domfeh, Emmanuel, Weyori, B., Mensah, J., Awarayi, N., & Appiahene (2022): Human-Centered Artificial Intelligence, a review. *Engineering Reports, ENG-2022-08-0231.R1*. TechRxiv. Preprint. <https://doi.org/10.36227/techrxiv.19174772.v1>

Emmanuel Adjei Domfeh, Felix Adekoya Adebayo, Benjamin Asubam Weyori, Jacob Mensah, Stephen Afrifa, Determining the best site location for underground dams using Fuzzy Analytic Hierarchy Process, a case study in the Sunyani west district, *International Journal of Intelligent Systems and Applications(IJISA)*, PAPER008197-1

Nimbe, P., Adjei Domfeh, E., Weyori, B., Adekoya Adebayo, F., Kwabena Mensah, P., Abra Ayidzoe, M., Appiah, O., Quayson, E., Boateng, S., Bawah, F., Kofi Nti, I., Nyarko Boateng, O., Songose, N., Akoto-Adjepong, V., & Mensah, J. Quantum Computer Games: a systematic review [Review of *Quantum Computer Games: a systematic review*]. *International Journal of Computer Games Technology*

Benjamin Asubam Weyori, Peter Nimbe, Emmanuel Adjei Domfeh, Jacob Mensah, Quantum Finance: a systematic review *Frontiers in Artificial Intelligence Artificial Intelligence in Finance*

Nimbe, P., Kofi Nti, I., Asubam Weyori, B., Boateng, S., Felix Adekoya, A., Boateng, O.-N., Kwabena Mensah, P., Abra Ayidzoe, M., Mensah, J., Adjei Domfeh, E., & Akoto-Adjepong, V. (n.d.). Pharmacy Information Systems: a systematic review. *Scientific African*.

ONGOING RESEARCH

- Assessing the current state of e-governance in Ghana, challenges and opportunities. Emmanuel Adjei Domfeh, Freda Addo, Adjei Bright, Christian Yendor and Richmond Kessie
- Blockchain technology applications in real estate, opportunities in the Ghanaian perspective. Emmanuel Adjei Domfeh, Jacob Mensah and Elizabeth Wiafe

CERTIFICATES

- **Python for Data Science, IBM**
NOVEMBER, 2019 — NOVEMBER, 2020

RESEARCH AREAS

- Human Centered AI
- Machine Learning
- Multi-criteria Decision Making
- Quantum Computing

SOFTWARE

- Pharmacy Management System for the IT directorate of the Sunyani Regional Hospital
- Health Screening Data Entry Application for Friends of Health (NGO)
- Restaurant Management System for Tasty Joint Restaurant Sunyani
- Sports Scouting Web app

SKILLS

- Effective Time Management
- Fast Learner Communication
- Ability to Work in a Team
- Microsoft Office
- Public Speaking
- Communication and Presentation
- Data Analysis
- Machine Learning
- Conceptual modelling
- Programming or coding in Java, C++, Python, Dart, VB.Net

EMPLOYMENT HISTORY/EXPERIENCE

- **IT Consultant, Vitus B Travel & Tours & Driving School, Sunyani**
2014 — MARCH, 2016
I was responsible for maintaining and upgrading all computing systems in the driving school and travel and tours.
- **Teaching and Research Assistant, University of Energy and Natural Resources, Sunyani, Ghana**
AUGUST, 2017 — AUGUST, 2018
I helped the head of Computer Science and informatics with administrative, research, and teaching.
- **Programs Officer, Regional Department of Community Development, Sunyani**
OCTOBER, 2018 — JANUARY, 2021
I was a regional Community Development IT and operations officer. My job was to manage all departmental computer and technology-related operations.
- **Head of Sports, Greena 95.9 Mhz**
JULY, 2018 — TO DATE

I lead a team of enthusiastic sports crew to serve listeners with the latest sports updates around the world. This job is pro-bono and voluntary.

- **Senior Research Assistant, University of Energy and Natural Resources, Sunyani**

FEBRUARY, 2021 — JULY, 2023

I work with the Department of Computer Science and Informatics. As a Research Assistant, I am keenly interested in assisting department members in discharging their various research duties. Through this, I have had the chance to collaborate with some exciting research

- **Assistant Lecturer, University of Energy and Natural Resources, Sunyani**

AUGUST, 2023 – TO DATE

I work with the Department of Information Technology and Decision Sciences at the University as an Assistant Lecturer. My job role encompasses teaching various courses at the undergraduate level (Programming with C++, Mobile Computing, Principles of Programming, E-Commerce Technologies, etc.), project work supervision, research, and community services.

AWARDS

- Best Senior Research Assistant in the Department of Computer Science and Informatics, University of Energy and Natural Resources

LEADERSHIP

- Senior School Prefect, Kumasi Academy, Kumasi
JANUARY, 2012 — JULY, 2013
- President, Debating Team of Writers' and Debaters Club, Kumasi Academy
MAY, 2012 — MAY, 2013
- Founding President of Computer Science and Information Technology Students Association (CSITSA, University of Energy and Natural Resources
MAY, 2013 — MAY, 2015
- Clerk of Student Representative Council Parliament, University of Energy and Natural Resources
MAY, 2013 — MAY, 2015

REFERENCES

- Dr. Peter Appiahene
Senior Lecturer & Head of Computer Science and Informatics Department
University of Energy and Natural Resources, Sunyani-Ghana
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- Dr. Samuel Boateng
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- Prof Adebayo Felix Adekoya
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