

MUSAH ALHASSAN

Objective

I am a Lecturer at Computer and electrical Engineering Department of University of energy and Natural Resources, Sunyani, specializing in electromagnetic engineering, emerging technologies in power systems, applied physics, and computational modeling. I have proven expertise in technical writing and problem-solving, with a strong work ethic and effective communication skills. I have successfully enhanced student engagement as a lecturer, fostering a deep understanding of complex engineering concepts.

Skills

- Technical writing
- Problem solving
- Effective communication
- Team collaboration
- Fieldwork experience
- Critical thinking
- Research ethics
- Documentation and reporting
- Strong mathematical aptitude
- Writing and editing
- Electromagnetic Analysis
- Strong work ethic

Experience

LECTURER 01/2026 - To Date

University of Energy and Natural Resources, Sunyani, Ghana

Instructed courses such as Advanced Power System Analysis, High Voltage Engineering, Power System Computation and Simulations, Smart Grid and Renewable Energy Resources, Electrical Machines, and Power Electronics.

PART-TIME LECTURER 11/2025 - To Date

Ghana Communication Technology University, Accra, Ghana

Instructed courses such as Applied Physics for Engineers and Applied Electricity

PH. D RESEARCHER 08/2021 - 06/2025

King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

Pursued a PhD in Electrical Engineering with a specialization in Electromagnetic Engineering

Served as a Laboratory Instructor for Electrical Circuits II and Electromagnetic Engineering

Served as a Teaching Assistant for Power Systems Utilization, Optics and Photonics, and Electrical Circuits

LECTURER 09/2019 - 06/2021

Tamale Technical University, Tamale, Ghana

Taught a variety of courses, including Electrical Machines I, II, III, and IV, Applied Electricity, Computer-Aided Design for Electrical Engineers, Microwave Engineering, and Power Systems Protection and Controls

Employed engaging teaching methods to enhance student understanding of complex engineering concepts.

PART-TIME LECTURER 09/2018 - 08/2019

Madina Institute of Science and Technology, Accra, Ghana

Instructed courses such as Basic Electronics, Applied Electricity, Basic Electrical and Mechanical Systems, Technical Presentations of Field Trips, and Vacation Training Reports I

DIRECTOR OF OPERATIONS 08/2016 - 08/2019

Neretva Ghana Limited, Accra, Ghana

Led the Electrical Installations, Servicing, and Maintenance Department.
Ensured efficient operation and maintenance of electrical systems.

PART-TIME LECTURER 01/2019 - 05/2019

Akim State College, Akin Oda, Ghana

Taught courses including Asynchronous Machines, Substation and Transmission Line Design, and Digital Control Systems.

INCIDENT AND DISPATCH MANAGER 10/2014 - 06/2016

Tigo Managed Services, Ericsson AB Ghana Limited, Accra, Ghana

Managed network operations support, incident management, and dispatch functions.

NETWORK OPERATIONS SUPPORT SUPERVISOR 05/2011 - 09/2014

Millicom Ghana Limited, Accra, Ghana

Supervised RAN, CS-Core, and PS-Core network support, contributing to network stability and reliability.

NETWORK OPERATIONS SUPPORT ENGINEER 01/2009 - 04/2011

Millicom Ghana Limited, Accra, Ghana

Provided technical support for RAN, CS-Core, and PS-Core networks.

UTILITY OPERATIVE ENGINEER 09/2007 - 08/2008

Tema Oil Refinery, Tema, Ghana

Operation of Steam Generators and Boilers.

TEACHING ASSISTANT 06/2007 - 09/2007

Electrical and Electronic Engineering Department, UMaT, Tarkwa, Ghana

Led tutorials in Applied Electricity and Basic Electronics

Education

Ph.D, Electrical Engineering, 05/2025

King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

GPA: 3.50/4.00

MSc, Electrical and Electronic Engineering, 07/2017

University of Mines and Technology, Tarkwa, Ghana

- Distinction
- GPA: 81.00/100.00

BSc (Hons), Electrical and Electronic Engineering, 05/2007

University of Mines and Technology, Tarkwa, Ghana

- First Class
- GPA: 72.06/100.00

Secondary Education, 06/2002

Sunyani Senior High School, Sunyani, Ghana

Certifications

- Data Analysis using Python, 07/01/24
- Smart Grids and Renewables, 11/01/23
- Mastering Leadership, 11/01/23
- Prioritization: An Implementation of Time Quadrant System, 10/01/23
- Oracle Certified Associate, 06/01/12

Publications

Journal

- Alhassan, M. and Alharbi, F. H. (2025). Revisiting Radiation Reaction: The Consideration of Delayed Interactions. Manuscript submitted.
- Alhassan, M. and Alharbi, F. H. (2026). Radiation Reaction: Status and Recent Developments. The European Physical Journal Plus, 141(2), p211.
- Nunoo, S., and Alhassan, M. (2019). Re-Farming of Existing 1800 MHz GSM Spectrum for LTE/LTE-A Deployment in Ghana. Ghana Journal of Technology, Vol. 3, No. 2, pp. 1-8.

Conferences

- Zakariyya, M. Z., Alhassan, M., and Kassim, A. Y. U. (2026). Edge-AI Implementation on UAVs for Low-Latency Radioactive Source Identification in Unstructured Environments. Paper presented at the 2026 International Conference on Frontiers of Engineering and Emerging Technologies (FET), Track 3: Emerging Technologies and AI Applications in Engineering, April 22 -23, 2026, University of Bahrain.
- Alhassan, M. and Alharbi, F. H. (2024). Rationalization of Radiation Reaction Force: Incorporating Delayed Interactions via Volterra Integral-differential Approach, 13th International Conference on Mathematical Modeling in Physical Sciences, ICM square, Kalamata - Greece, September 30 to October 03, 2024.
- Alhassan, M., Zakariyya, M. Z., and Kassim, A. Y. U. (2023). Design and Performance Evaluation of Broadband Quadrature Modulator Using 90 Coupler. In 2nd International Conference on Multidisciplinary Engineering and Applied Science (ICMEAS), Vol. 1, pp. 1-5. IEEE. November 2023, Nile University of Nigeria.

Theses and Dissertations

- Alhassan, M. (2025). Delay Interaction and Charge Particle Size Effects on Radiation Reaction. Ph.D dissertation submitted to the Dean of Graduate Studies, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.

- Alhassan, M. (2017). Re-Farming of Existing 1800 MHz GSM Spectrum for LTE/LTE-A Deployment in Ghana. MSC Thesis submitted to the Electrical/Electronic Engineering Department of the University of Mines and Technology, Tarkwa, Ghana.

Reference

- Dr. Fahhad H. Alharbi, Professor, Electrical Engineering and Physics Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, fahhad.alharbi@kfupm.edu.sa, +966 13 860 2337, Mentor and PhD Thesis Advisor
- Ing. Dr. Benjamin Asubam Weyori, Professor, Computer and Electrical Engineering Department, University of Energy and Natural Resources, P. O. Box 214, Sunyani, Ghana, <file:///Users/apple/Downloads/benjamin.weyori@uenr.edu.gh> benjamin.weyori@uenr.edu.gh, +233 24 4407521, Mentor and Head of Department
- Ing. Abubakar Iss-hak Banse, Founder and CEO, Primo Limited, 4th Floor, Stanbic height, Accra, Ghana, abubakar.iss-hak@one4all.com.gh, +233 200800196, Mentor

Awards

- Full Scholarship for PhD studies at King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
- A member of the Technical Team that achieved the Best Telecommunication Network in Ghana, 2011, Millicom Ghana Limited
- Best Technical Staff for Quarter 2, 07/01/11, Millicom Ghana Limited
- Best Network Operations Staff for 2012, 2012, Millicom Ghana Limited
- Best Network Operations Staff for 2011, 2011, Millicom Ghana Limited
- Best Network Operations Staff for 2010, 2010, Millicom Ghana Limited

Professional Memberships

- Professional Engineer, Ghana Institution of Engineers, 07536, 06/01/13, Present
- Professional Member, Institute of ICT Professionals Ghana, 1000017, 03/01/17, Present
- Professional Engineer, Association of Muslim Engineers, 06/01/22, Present

Accomplishments

- A member of the technical team that achieved the best telecommunication network in Ghana, Millicom Ghana Limited, 2011
- Best technical staff for quarter 2, 2011, Millicom Ghana Limited, July 2011

Languages

English: First Language

Arabic: Beginner
