

EMANUELE MERVEILLE GUEHI



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PROFILE

I am a motivated Physics graduate with hands-on experience in nuclear security and radiation protection. I am skilled in programming, specifically web development and 3D modelling, and I am interested in computational applications for sustainable energy and nuclear technology. I am eager to contribute to research and development in energy systems, focusing on safety, efficiency, and reliability.

RESEARCH INTEREST

Applied Physics & Engineering

- Measurement and Sensor Technologies
- Computational Methods and Engineering.
- Atomic Physics and Nuclear Applications.
- Power Electronics and Energy Conversion
- Computational Astrophysics/Mechanics
- Engineering Mechanics and Thermodynamics

Renewable & Smart Energy Systems

- Renewable & Sustainable Energy Systems
- Wind Energy Conversion Systems
- Solar Energy and Photovoltaics
- Bioenergy and Hybrid Systems
- Grid Integration and Smart Energy Systems
- Energy Storage and System Optimisation

EDUCATION

Feb 2025 – Present

DAAD Scholar, German Language Student (Ongoing: A1 - B1 expected)

- S + W Speak + Write gGmbH Sprachschule, Marburg, Germany.
- Certificate: A1.1 completed | B1 expected by September.

Sept 2017 – Nov 2021

Bachelor of Science, Physics, Biomedical Physics Option

Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

- Scholarship: DAFI Ghana (German Academic Refugee Initiative)
- Class Designation: Second Class Honours Upper Division.
- Cumulative Weighted Average (CWA): 60.72

Dec 2014 – Jun 2017

WASSCE West Africa Senior High School Certificate, General Science

Faith Community Baptist Senior High School, Ghana

- UNHCR Partial Support for Refugees.

WORK / RESEARCH EXPERIENCE

Aug 2021 – Nov 2023

Assistant Nuclear Security Officer

Nuclear Regulatory Authority (NRA), Accra, Ghana

- Collaborated on designing a scintillation detector for nuclear and radioactive material detection using SolidWorks 3d and MATLAB.
- Developed proficiency in complex system design, radiation detection, optimisation, and efficiency through hands-on project experience at the NRA.

Jan 2021 – Aug 2021

Undergraduate Research Projects

Title: *Design and Simulation of a Departmental Liquid Nitrogen Plant*

- Developed a liquid nitrogen system tailored to departmental needs using household and local materials for the Nitrogen adsorption process
- Made 3d models for the design and MATLAB for simulating thermodynamic variables like flow rate, compression ratios, and pressure regulation.
- Gained applied knowledge in cryogenics, project management, teamwork and engineering design.

CERTIFICATIONS

- **German Language Certificate (A1.1)** – Speak + Write, Marburg (currently progressing to B1)
- **DAAD Leadership for Africa (LFA) Scholarship**, 2025
- **ALX Software Engineering Program**, 2024
- **MATLAB (Simulink/Onramp)**, 2024
- **ALX AI Career Essentials Program**, 2024 (with Mastercard Foundation)

TECHNICAL SKILLS

- **Programming Languages:** C++, Python, JavaScript, HTML, CSS
- **Frameworks:** Bootstrap, Tailwind CSS, Next.js 14 / React.js, Material UI, Node.js
- **Developer Tools:** VS Code, CodeBlocks, WebStorm IDE, GitHub, Vercel
- **Modelling & Simulation:** Blender 3D, SolidWorks 2016, MATLAB Simulink
- **Documentation:** Microsoft Word, Excel, PowerPoint, LaTeX.
- **Design Tools:** Adobe Illustrator, After Effects, XD, Premiere Pro

PERSONAL PROJECTS (See GitHub: Merveille94 or www.emanueleguehi.com)

- **Portfolio Website** development (May 2025)– Built and hosted my website containing all my projects and research experience, as well as other skills.
- **MedAdhere website** – medadheregh.org (Dec 2024) – Research, Design and developed a website for Patient Doctor Med tracking WebApp as part of my volunteerism at InfoProSolutionGh Ltd.
- **Carbon Footprint Calculator** (May 2024) – Web app using C++ to estimate users' daily carbon footprint.
- **Solar Energy Potential Calculator** (April 2024) – Integrated with NREL API to predict solar energy output by location (US Only).
- **Radiation Dosage Calculator** (Sept 2022) – Initially built in C++, later converted to JavaScript for real-time radiation dose estimates.

LANGUAGES

- English – Full Professional Proficiency (High School + Undergraduate degree in English)
- French – Native (Mother Tongue from Cote d'Ivoire)
- German – A1.1 Certified (currently enrolled to complete B1 at S + W Speak + Write, Marburg)

EXTRACURRICULAR ACTIVITIES

- **Coding & Web Projects:** Build personal and volunteer web apps available on GitHub collaboration.
- **Chess & Rubik's Cube:** Play chess and solve cubes regularly to enhance logic and focus.
- **Reading & Anime:** Enjoy reading books, and deep-storyline anime for relaxation and insight.
- **Pencil Sketching:** Draw as a creative hobby, focusing on shading and portrait.
- **Coursera Courses:** Take online courses *Calculus* and *Particle Physics* for knowledge beyond academics.

LEADERSHIP AND VOLUNTEERISM

Junior Web Developer (Volunteer)

InfoProSolution GH Ltd – Kumasi, Ghana (2024)

- Designed and developed the official website for **MedAdheregh.org**, a digital platform supporting medical adherence.
- Contributed to front-end and back-end enhancements for various health tech projects.
- Supported the team in refining UI/UX and debugging tasks across multiple applications.

Freelance Web Developer (Volunteer)

Gwaipro Church Music Studio – Ghana (2024)

- Built and deployed **www.gwaipro.com** to promote community-based music production services.
- Ensured responsive design and user-friendly navigation using React and Tailwind CSS.
- Delivered continuous technical support and content maintenance.

Deputy Chairman, Science and Technology Committee

KNUST, Kumasi (2019)

- Launched student coding workshops and introduced physics applications through web development.
- Organized academic colloquia and peer-led tech learning sessions.
- Volunteered as a French language tutor during weekends.

Financial Secretary – DAFI Scholarship Club

Accra, Ghana (2019)

- Oversaw financial planning, expense tracking, and fund sustainability for student activities.
- Prepared periodic financial reports to support transparency and future planning.

Volunteer Coordinator – DAFI Community Engagement

Egyeikrom Camp, Ghana (2019)

- Led donation campaigns and coordinated logistics for refugee health initiatives including malaria testing and blood pressure screening.

Volunteer Mentor – DAFI Mentorship Program

Krisan Camp, Ghana (2018)

- Provided academic coaching and motivational sessions to encourage higher education among refugee youth.

REFEREES

Upon Request