

# SAMUEL ELI SETSOFIA

| [samuelsetsofia2025.1@u.northwestern.edu](mailto:samuelsetsofia2025.1@u.northwestern.edu) | +233530904523

[Github](#) | [LinkedIn](#) | [Data Science Portfolio](#)

## EDUCATION

---

### University of Ghana

2016 - 2020

#### Bachelor of Science in Biomedical Engineering (With Hons)

*Premier University in Ghana with the first and best Biomedical Engineering program in the country*

- **Thesis:** Design of a First Aid Device for Reducing Blood Loss and Simultaneously Measuring Vitals of Women Suffering from Postpartum Haemorrhage (PPH) in Sub-Saharan Africa
- **Modules:** Biotechnology, Biomechanics, Bioinstrumentation, Biomaterials, Computational Methods, Cell and Molecular Biology, Tissue Engineering, Medical Physics

### ALX Africa, Data Analytics (Certificate)

May 2023 - Dec 2023

*Subsidiary of African Leadership University, with focus on training African youth in employable software skills*

- Modules: ETL, Data Analysis, Querying Data, Data Preparation, Data Visualization

### MEST Africa, Software Entrepreneurship (PG Certificate)

Jan 2022 - Aug 2022

*Best Software Incubator program for African Software Entrepreneurs- founded by Meltwater Inc.*

- Modules: Software Engineering, Entrepreneurship, Product Development, Business

## AWARDS

---

**Nyaho Excellence Award** - Best Performing Staff in Operations Department for 2021

**TALT Scholar** - Fully funded scholarship for academic excellence at the University of Ghana.

**MEST Africa** - Fully funded program recognizing emerging leaders in software entrepreneurship.

**ALX Africa Scholarship** - Awarded for demonstrated excellence in data analytics program.

## RESEARCH EXPERIENCE

---

### University of Ghana, Supervisor: Dr. John Kwaku Kutor

Sep 2019 - Mar 2020

*Premier University in Ghana with the first and best Biomedical Engineering program in the country*

**Project Title:** Design of a First-Aid Device for Reducing Blood Loss and Simultaneously Measuring Vitals of Women Suffering from Postpartum Haemorrhage (PPH) Roles and Contributions

- Designed and developed a first-aid compression device aimed at reducing blood loss and monitoring vital signs in postpartum haemorrhage patients to address the critical issue of maternal mortality due to PPH in sub-Saharan Africa by providing an effective first-aid solution that can be used in low-resource settings.
- Utilised MATLAB, Proteus, and Arduino for bioelectronics and device prototyping.

### The Researcher.AI - Project Lead

Feb 2023 - Present

*Personal project to develop and hone my AI and ML skills , for building generative AI platforms and web scraping techniques*

- Developed an AI tool for streamlining data collation and consolidating diverse sections of academic theses. Technologies used include Django (Python), web scraping, prompt engineering, and natural language processing (NLU).

**IRC WASH Academy Chatbot Engineer:****Oct 2023 - Present**

*IRC WASHNote - a leading non-profit organisation located in The Netherlands focused on training WASH professionals for building strong water sanitation and hygiene systems*

- Developed an AI chatbot integrated with knowledge graphs to enhance content retrieval and user interaction for the WASH Academy. Employed LLMs, RAG, and semantic search techniques, significantly enhancing chatbot performance and user engagement.

**WORK EXPERIENCE**

---

**AI Chatbot Intern, IRC WASH Systems (Contract )****October 2023 - Present**

*IRC WASHNote - non-profit organisation for building strong water sanitation and hygiene systems*

- Innovatively designed and developed a comprehensive AI chatbot from scratch, integrating knowledge graphs to revolutionise content retrieval and user interaction for the WASH Academy.
- Demonstrated exceptional technical proficiency by employing LLMs, RAG and semantic search techniques , significantly enhancing the chatbot's performance and user engagement.

**Product Manager, Copianto AI****Aug 2022 - Mar 2024**

*AI driven tech startup helping businesses in Africa to scale by providing AI development tools*

- Spearheaded the development of Copianto.ai, driving a 50% increase in client engagement by implementing AI-driven features based on detailed user feedback and rigorous product testing.
- Exhibited strong leadership in managing a team of developers to enhance product functionality, leading to a notable 25% improvement in customer satisfaction.

**Biomedical Engineer, Nyaho Medical Centre****Oct 2020 - Jan 2022**

*Best Private Medical facility in Ghana by Health Facility Regulatory Agency*

- Engineered an innovative electronic booking system, reducing equipment downtime by 30% and significantly improving operational efficiency.
- Created and maintained a medical equipment maintenance database for ~500 medical equipment/devices including mobility devices, aggregating data from multiple sources.

**Academic Team Lead, Tech Era, Yenso Initiative****Sep 2018 - Mar 2020**

*Persons with disability startup focusing on developing learning software for disabled persons*

- Led the volunteer of 8 students from campus to Okuapeman Senior High School every weekend to mentor and coach visually impaired students.

**University of Ghana, Bioinstrumentation Lab- Intern****Jun 2019 - Sep 2019**

*Department of Biomedical engineering, Bioinstrumentation lab for Bioinstrumentation research and design projects*

- Responsible for diagnosing and fixing faults in medical life support equipment, such as patient monitors and neonatal intensive care units, and designing simulated PCBs using Proteus and Easy EDA software.
- Participated in lab projects involving MATLAB and other data processing software, practised coding with Atmel Studio and Arduino, and built simple electronic systems.

**Aiesec Volunteer, Kazan****Jun 2018 - Aug 2018**

*Largest global volunteer organisation for International Volunteerism for youth*

- Volunteered in Russia to help promote English as a second language for students in Kazan

## SKILLS

---

- **Software skills:** Python, JavaScript, Django, React, PyTorch, TensorFlow, Keras, SciKit Learn, Plotly , CozoDB, Django REST Framework, Selenium, Scrapy, Splash Linux, MATLAB, R, AutoCAD, Simulink, Abaqus, SolidWorks, Amira, GitHub, Microsoft Office, database and server management, API designs, web scraping, NLP/NLU (BERT, GPT-3, LLAMA2, Prompt Engineering), Knowledge Graphs, Ontologies
- **Technical skills:** Deep learning, machine learning, biomedical optics/imaging, biomechanics, medical device hardware and software design, rapid prototyping, 3D pRg, mobile application design, clinical study design and implementation, electronic schematic design, printed circuit board design, microcontroller programming
- **Professional skills:** Interdisciplinary teamwork, research project management, grant writing,, research presentations, and pitch deck presentations

## CERTIFICATIONS

---

- Goldman Sachs Virtual Engineering Intern
- Forage Engineering Virtual Program
- Data Science BootCamp (Noble Work Foundation & Udemy)
- Applied Data Science Lab (WorldQuant University)
- Enterprise Design Thinking (IBM)
- Agile Methodologies, Git, HTML & CSS , Web Development, JavaScript (IBM )
- Django Rest API with Python (Udemy)
- NLP with Python
- ChatGPT Prompt Engineering for developers
- LLM applications with LangChain(Data Camp)

## CONFERENCES & SIGNIFICANT EXTRACURRICULAR ACTIVITIES

---

### ICT4D Conference Volunteer, MERL Tech

**Mar 2024**

*Largest conference in Africa on ICT for global impact - organised by CRS*

- Led a pioneering workshop on no-code chatbot development, directly contributing to the democratisation of AI technology.
- Facilitated discussions on the use of generative AI and SBC in technology, showcasing leadership in AI application for social impact.

### Academic Coach Volunteer, StemBees

**Apr 2022**

*STEM focused NGO for mentoring basic school student from rural parts of Ghana*

- Mentored students in Kwaman District in Central Region of Ghana using Coding games to develop their interest in Software Engineering.
- Spearheaded coding workshops for underprivileged students, igniting a passion for software engineering in over 100 participants.

## REFERENCES

---

**Available Upon Request**