ERNEST OBIMPEH

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RESEARCH INTERESTS

Human-computer interaction, learning analytics, interactive learning systems, human-centered AI and data visualization. I am particularly interested in what students' interactions with virtual science experiments can reveal about their understanding and difficulties during practical work.

EDUCATION

University of Cape Coast, Ghana | 2014–2018

Bachelor of Science in Laboratory Technology

RESEARCH AND TECHNOLOGY PROJECTS

Elementa Labs Africa — Founder & Lead Developer | Feb 2025–Present

- Founded Elementa to give secondary school students with limited laboratory access the opportunity to perform science experiments virtually.
- Developed interactive chemistry, physics and biology experiments aligned with WASSCE practical requirements.
- Built systems for guided experimentation, automated assessment, student performance tracking and teacher-assigned practicals.
- Reached 81 registered students and 15 teachers during early rollout; the five most-used experiments recorded 1,071 sessions (November 2026; includes possible testing activity).
- Developed an analytics dashboard to monitor experiment usage, session duration, engagement and practical completion.
- Exploring how interaction data could help distinguish procedural difficulties from gaps in conceptual understanding.

PINN Ghana — Founder & Independent Software Developer | Mar–Jul 2026

- Developed a crowdsourced platform for reporting potholes and other road hazards in Ghana.
- Integrated geolocation, interactive mapping and multimedia reporting.
- Designed workflows to connect road users with relevant public authorities and track reported hazards through to resolution.

UNDERGRADUATE RESEARCH

University of Cape Coast — Undergraduate Researcher | Feb–May 2018

Investigation of Pesticide Residue Levels in Dried Chilli Pepper from Four Selected Communities in Ghana

- Prepared samples, conducted laboratory analyses and interpreted experimental results.
- Documented research methodology, experimental procedures and findings in an undergraduate dissertation.

PROFESSIONAL EXPERIENCE

Xpendly — Software Developer | May 2026–Present

- Contributed to web application development, including Enfoni Ghana, implementing application features and user interfaces.

PROFESSIONAL EXPERIENCE (CONTINUED)

EXA Ventures — Project Coordinator / Project Manager | Feb–Nov 2026

- Coordinated the EXA-ANESVAD Socio-Economic Empowerment Project, targeting 100 beneficiaries, including people affected by neglected tropical diseases, persons with disabilities and vulnerable women.
- Coordinated field visits, psychosocial and socioeconomic assessments, and community-level data collection.
- Monitored beneficiaries' business activities, analyzed sales data and prepared reports on project activities and outcomes.

Selasie Farms — Quality Control Officer | Mar 2019–Aug 2022

- Conducted laboratory analyses, monitored product quality and recorded and interpreted test results for food safety and quality control.

Ketu South Municipal Hospital — Medical Laboratory Assistant | Sep 2018–Aug 2019

National Service

- Assisted with specimen preparation, routine laboratory testing and documentation of results.

TEACHING EXPERIENCE

Independent Mathematics and Science Tutor (part-time) | Jan 2019–Jun 2026

- Provided individual home tuition in mathematics and science, including WASSCE preparation for senior high school students.

Almighty International School — Mathematics and Science Teacher | Sep 2012–Aug 2014

- Taught mathematics and integrated science at the junior high school level.

ENTREPRENEURSHIP

Focus Farms — Founder | Feb 2021–Present

- Established an agribusiness focused on honey production and sustainable beekeeping.
- Appeared on Ghana Broadcasting Corporation (GBC) to discuss sustainable beekeeping.

AWARDS, FUNDING AND PROFESSIONAL TRAINING

2025 | Tony Elumelu Foundation Entrepreneurship Grant — Funding for the development of Focus Farms.

2023 | MEST Africa — Entrepreneurship development training sponsored by Generation Africa.

TECHNICAL AND RESEARCH SKILLS

Programming: Python, JavaScript, TypeScript

Software and databases: React, Next.js, HTML, CSS, Tailwind CSS, PostgreSQL, Prisma

Data analysis: pandas, NumPy, Matplotlib, Jupyter Notebook

Development tools: Git, GitHub, Visual Studio Code

Research methods: Laboratory experimentation, experimental data analysis, field research, data collection, monitoring and evaluation, scientific reporting.

Languages: English, Twi

PROJECT LINKS

Elementa Labs Africa: https://elementalabsafrica.com
PINN Ghana: https://pinnghana.com
Enfoni Ghana: https://enfonighana.com