

Samuelson Israel Boadu-Acheampong

+233 50 131 1813 · samuelsonacheampong@gmail.com · [linkedin.com/in/boadu-acheampong](https://www.linkedin.com/in/boadu-acheampong) · github.com/3NaNa7 · Kumasi, Ghana

EDUCATION

Sep 2019 – Sep 2023 **Bachelor of Science in Computer Science | First Class Honours**

Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
Duration: 4 years (standard: 4 years)
Cumulative Weighted Average (CWA): 73.19/100

RESEARCH EXPERIENCE

Nov 2023 – Feb 2025 **Research Assistant | National Service (concurrent with Teaching Assistantship)**

Dept. of Computer Science, KNUST · Supervisor: Dr. Kate Takyi

Selected for a merit-based research placement within the Department of Computer Science under Ghana's National Service Scheme.

Research role extended beyond official national service period to finalise ongoing research contributions.

AfriSign — African Sign Languages Machine Translation

- Curated and annotated a multilingual sign language video dataset covering six African sign languages across six countries, (sourced from publicly available recordings) using MediaPipe for human keypoint extraction.
- The resulting multilingual model achieved 94.6% accuracy and 97.3% precision across all 6 sign languages.

CNN-BiLSTM Fraud Detection

- Led manuscript preparation for a CNN-BiLSTM fraud detection study on mobile money, engaging critically with the team's architectural and experimental decisions to translate them into rigorous academic writing.

PUBLICATIONS

Aug 2025 **Advanced Mobile Money Fraud Detection Using CNN-BiLSTM and Optimized SGD with Momentum**

Yussif, N., Takyi, K., Gyening, R.M.O.M., Boadu-Acheampong, S.I.
AJIT-e: Academic Journal of Information Technology, 16(3), 207–231.
<https://doi.org/10.5824/ajite.2025.03.002.x>

Jan 2025 **AfriSign: African Sign Languages Machine Translation**

Takyi, K., Gyening, R.M.O.M., Gueuwou, S.M., Nyarko, M.S., Adade, R., Borkor, R.N.,
Boadu-Acheampong, S.I., Tabari, L.
Discover Artificial Intelligence, 5, 6 (2025).
<https://doi.org/10.1007/s44163-025-00227-7>

PROJECTS

Nov 2023 – Sep 2024 **AfriSign App — AI-Powered Sign Language Translation Mobile Application**

Flutter · Firebase · REST API · Figma

- Developed a cross-platform mobile application as the deployment interface for a trained multilingual sign language translation model, integrating REST API calls to the ML backend and managing data flow between the model server and the mobile client.
- Brought a peer-reviewed sign language translation system to real users across six African sign language communities.
- Conducted user testing at the KNUST Disability Center and with sign language community members, revising the interface based on direct feedback.

Jan 2023 – Sep 2023 **Dialogi — Academic Audio Discussion Platform**

Agora.io · Firebase · Flutter

- Built a room-based audio platform for cross-disciplinary academic collaboration, where students could create, join, and leave topic-based study and discussion sessions in real time.
- Reached 150+ active student users within the KNUST CS cohort, with adoption spreading to the Mathematics, Physics, and Electrical Engineering departments.

[Repository github.com/3NaNa7/dialogi](https://github.com/3NaNa7/dialogi)

Jul 2022 – Dec 2022 **FindMe — KNUST Location Sharing & Tracking Application**

Flutter · Google Maps API

- Developed a real-time location tracking app with live geocoding via Google Maps API and Firebase, delivering continuously updated readable addresses to users.
- Reached 500+ student users, with first-year students emerging as the primary users, using it to navigate an unfamiliar campus.

[Repository github.com/3NaNa7/FindMe](https://github.com/3NaNa7/FindMe)

PROFESSIONAL EXPERIENCE

- Mar 2025 – Present **Digital & Technology Consultant**
Topmost Tuition Language School, Kumasi, Ghana
- Sole technical lead, building the school website and setting up the online registration system and virtual classroom infrastructure, expanding Topmost Tuition from Kumasi to students across all 16 regions of Ghana.
 - Grew social media audience to 40,000+, directly contributing to increased student enrolment.
- May 2024 – Nov 2024 **Coding & Front-end Development Facilitator**
e-HAPPY Project · Mastercard Foundation / Agri-Impact · KNUST E-learning Centre
- Delivered web development training to 24 agri-food graduates under a Mastercard Foundation-sponsored programme, guiding participants with no prior technical background from basic computer literacy to live website deployment.
 - Achieved 100% completion rate, with all 24 participants successfully deploying functional websites using WordPress and GitHub Pages by programme end.
- Sep 2020 – Oct 2022 **Web Developer (LMS Platform | Remote)**
Sunset Mountain School, Kumasi, Ghana
- Implemented Node.js streaming and Express.js compression middleware to reduce payload size and cut upload/download latency, and redesigned the frontend using Bootstrap CSS for an LMS serving 500+ students and staff.
 - Maintained zero unresolved issues beyond 24 hours throughout the contract, keeping the platform running without disruption across the full academic year.

TEACHING EXPERIENCE

- Jan 2024 – Aug 2024 **Teaching Assistant | National Service (concurrent with Research Assistantship)**
Dept. of Computer Science, KNUST · Supervisor: Dr. Kate Takyi
- *CSM 183/184 (Introduction to Computers I & II)*: Delivered lab sessions covering MS Office and internet fundamentals to 500+ first-year students, bringing the majority from zero practical computer literacy to independently creating presentations and managing documents.
 - *CSM 177 (Computer Appreciation)*: Taught computer and internet fundamentals to 200+ Sociology students, equipping them with practical digital skills applicable across their academic work.
 - *CSM 255 (Open Source Operating Systems)*: Conducted interactive tutorials on Ubuntu, terminal commands, and OS fundamentals for 250 second-year students, building their confidence navigating a non-Windows environment from scratch.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript/Typescript, Java, C++, SQL.

Web & Backend: Node.js/Express.js, MongoDB, MySQL, REST API Design, OAuth/JWT.

Mobile & Frontend: Flutter, React/Next.js, CSS frameworks (Tailwind, Bootstrap), Supabase, Firebase.

Data Science / ML: Familiarity with Python data tooling (Pandas, NumPy), and exposure to CNN/BiLSTM and keypoint-extraction pipelines (MediaPipe, TensorFlow/Keras) through research work.

Tools: Git/GitHub, Ubuntu/Linux, Figma, Postman, Github actions, LaTeX.

AFFILIATIONS & LEADERSHIP

- Mar 2024 – Present **Member — Black in AI**
Active participant on the Black in AI community forum (blackinai.joleh.com), engaging in discussions on fairness, representation, and AI system design for underrepresented communities.
- Sep 2022 – Aug 2023 **Coding Tutor — Google Developer Student Clubs, KNUST**
Led weekly meetups; mentored 40+ students in programming fundamentals.
- Sep 2019 – Sep 2021 **Web Team Member — National Union of Presbyterian Students (KNUST)**
Managed online member registration and maintained the official website for a university-wide Presbyterian student organisation.