Jochebed Afua

Applied AI – Machine Learning, Software Engineering, Data Science
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OBJECTIVE

I am a continuous learner dedicated to building research-driven, context-aware solutions that are practical, scalable, and deeply rooted in real user needs to create meaningful impact, especially in healthcare

EDUCATION

Ashesi University   **Berekuso, Ghana**
BSc. Computer Science   **Jan 2021 – Aug 2024**
- CGPA: 3.74/4.0, First-Class Honors (Magna Cum Laude)
- Relevant Courses: Data Structures, Algorithm Design & Analysis, Advanced Databases, Data Science, Operating Systems, Computer Organization & Architecture, Artificial Intelligence, Linear Algebra, Discrete Structures

University of Toronto   **Scarborough, Canada**
Academic Exchange Program   **Sep – Dec 2023**
- Recipient, Global Affairs Canada Scholarship
- Focus: Engineering Large Software Systems, Computer Networks, Advanced Data Analysis, Research Methods

RESEARCH EXPERIENCE

Applied Research Capstone – Ashesi University, Ghana   **Jan – Jul 2024**
- Investigated limitations of Ghana's LHIMS at Korle-Bu Teaching Hospital, focusing on workflow inefficiencies and infrastructural constraints
- Proposed a context-aware, offline-first health information management system
- Developed a PWA with integrated data management and facial recognition for patient identification
- Accepted for publication at the IEEE Global Humanitarian Technology Conference (GHTC 2025)

The Reach Alliance – Toronto, Canada   **Jan – Dec 2023**
- Conducted sequential mixed-method research on the "No Bed Syndrome" in Ghanaian tertiary hospitals
- Collected primary data via 15 key informant interviews using a snowballing approach and applied thematic analysis, identifying eight core themes
- Applied the central limit theorem in sampling to design and execute a quantitative survey (90% response rate), analyzing results in R, and identifying statistically significant factors at 95% confidence
- Published case study in the Reach Alliance Research Repository (2024)

PUBLICATIONS

Basil, J., Tamakloe, A. T., Owusu, D. A. (2025). An Improved Health Information Management System for Korle-Bu Teaching Hospital. *IEEE GHTC 2025.* Available at: [Link](#)

Agbatsi, E. A., Basil, J., Fiergbor, C. N., Reindorf, S., Agbodjah, S., & Asante-Darko, D. (2024). The "No Bed Syndrome" in Ghanaian Tertiary Hospitals [Case Study]. *Reach Alliance*. Available at: [Reach Alliance Case Study](#)

SELECTED PROJECTS

Temporal Dynamics of Engagement Patterns in Online Platforms
Conducted data wrangling and exploratory analysis on 100K+ online user interactions to identify engagement patterns across communities. Engineered custom GS scores using cosine similarity to measure user diversity and participation breadth. Applied STL decomposition and ARIMA modeling to analyze temporal trends, seasonality, and anomaly detection in engagement data. Clustered users via K-Means and visualized group differences in engagement intensity and temporal behavior

Sentiment Analysis with Deep Learning and Traditional Machine Learning
Compared Deep Learning (RNN) with Traditional Machine Learning for sentiment analysis. Used natural language processing on unlabeled datasets, applying TF-IDF and VADER for processing and feature weighting. Accuracy scores showed RNN's advantage with larger datasets, highlighting its strength in handling big data for sentiment analysis

Statistical Analysis of Adolescent Mental Health and Quality of Life
Analyzed the relationship between mental health and quality of life in adolescents, with depression as a key indicator, using data from 28,349 respondents aged 10–19. Conducted statistical analysis in R, applying the Chi-Squared Test to assess associations between depression levels and quality of life domains (health status and family income)

PROFESSIONAL EXPERIENCE

Genser Energy – Accra, Greater Accra   **Oct 2025 – Present**
Technology Analyst (Data & Product)
- Work closely with enterprise data systems using Sage X3 (ERP)**,** gaining exposure to large-scale software architecture, backend data structures, and workflow automation
- Build and maintain reporting pipelines using Sage Business Intelligence and Power BI, strengthening skills in data modeling, query logic, and systems integration

- Collaborate with technical and non-technical teams, enhancing experience with requirements gathering, system constraints, and user-centric data solutions

UNICEF Ghana – Accra, Greater Accra   **Jan – Aug 2025**
Differentiated Learning Data Analyst
- Collected and analyzed performance data from 30+ Grade 3 students to identify learning gaps and track progress
- Applied data insights to apply differentiated lessons aligned with student ability levels
- Used EdTech tools to capture real-time data, build dashboards, and guide classroom decisions
- Translated learning metrics into recommendations that improved instruction and advanced foundational literacy and numeracy goals

M'Ayaresa HealthTech – Weija, Greater Accra   **Sep 2024 – Present**
ML Software Engineer
- Design and develop a microservices-based hospital information system with Java Spring Boot RESTful APIs
- Collaborate on UI/UX design in Figma, ensuring an intuitive and seamless user experience
- Research and integrate AI features, like CNN-based facial recognition (PyTorch) and predictive analytics (scikit-learn)
- Ensure system scalability, data security (HIPAA compliance), and optimized PostgreSQL schemas for patient records

Mesika Limited – East Legon, Greater Accra   **Jul – Aug 2022**
Software Engineering Intern
- Redesigned and developed the backend of a pharmacy sales and inventory system using Django
- Implemented real-time stock tracking, branch transfers, and automated invoicing
- Achieved 95% reduction in system downtime by optimizing PostgreSQL concurrency handling
- Employed (SDLC) methodologies for system modeling and maintained comprehensive technical documentation

PRESENTATIONS

Reach Annual Conference – Monterrey, Mexico   **Nov 2023**
"**Advancing Access: Bridging Gaps in the Healthcare Systems**"
- Presented findings from mixed-method research on Ghana's "No Bed Syndrome" in a 30-minute talk

SKILLS

- **Programming Languages:** Python, Java, R
- **Frameworks:** Spring Boot, Django, React, Flask, Flutter
- **AI/ML:** TensorFlow, PyTorch, Scikit-learn, Pandas, NLP, Computer Vision
- **Cloud & Tools:** AWS (Certified), Vercel, Git, Figma
- **Database Systems:** SQL, MySQL, PostgreSQL
- **Human Languages:** English, Akan, Italian; Intermediate Sign Language; Basic French

CERTIFICATIONS

AWS Certified Cloud Practitioner, Amazon Web Services	**Mar 2025**
Tools of Data Analysis, International Human Resources Development Corporation	**Aug 2023**
The Data Science of Health Informatics, Johns Hopkins University (Coursera)	**Aug 2021**

ACHIEVEMENTS/AWARDS

Best Team Award, Applied Computer Science Capstone Project, Ashesi University	**Aug 2024**
MBA Immersive Field Course Consultant, Harvard Business School	**Jan 2024**
Scholar Representative for Cape Town Convening, Africa Health Collaborative	**Oct 2023**
Global Citizenship Fellowship, Melton Foundation	**Mar 2023**
Mastercard Foundation Scholarship, Ashesi University	**2022 – 2024**
Dean's List Honors (7/8 semesters), Ashesi University	**2021 - 2024**
Empowering Female Minds in STEM Scholarship	**Sep 2021**

ADDITIONAL ACTIVITIES (SELECTED)

Public Relations Officer, Ashesi Sign Language Club	**Sep 2023 – May 2024**
Global Media Fellow, Open Society University Network	**Oct 2022 – May 2024**
Peer Counsellor, Ashesi Counselling, Coaching, and Academic Advising Department	**Aug 2022 – Aug 2024**
Communications Work-Study, Ashesi Entrepreneurship Center	**Feb 2022 – May 2023**
Volunteer Career Peer Advisor, Ashesi Career Services	**Sep 2021 – Aug 2024**