**PRINCE SAMUEL KYEREMANTENG**

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**PROFILE SUMMARY**

Motivated computer scientist specializing in software engineering, AI, and data analytics. Experienced in academic research and peer-reviewed publication, with a proven ability to design and implement large-scale software systems. Skilled at bridging theory and practice through teaching, leadership, and collaborative projects across academia and industry.

**EDUCATION**

**University of Ghana, Legon** Accra, Ghana Master of Philosophy in Computer Science(in progress, expected completion: 2026)

**Relevant Coursework:** *Advanced Software Engineering, Distributed Systems, Advanced Data Structures and Algorithms, Advanced Database Systems, Data Visualization, Research Method, Bioinformatics, Information Systems Security.*

***Thesis:*** *A Hybrid Data Imputation Technique for Handling Missing Data in IoT Sensor Data Using LSTM and VAEs*

**University of Ghana, Legon** Accra, Ghana Bachelor of Science in Computer ScienceSeptember 2019 - September 2023

**CGPA: 3.45/4.0**

**Relevant Coursework:** *Artificial Intelligence, Software Engineering, Programming Fundamentals, Digital and Logic Systems Design, Multimedia and Web Design, Computer Organization & Architecture, Mobile Application Development, Systems Administration, Operating Systems, Human Computer Interaction*

***Project:*** *SmartFlow: An IoT-Based Smart Irrigation and Environmental Data Gathering System*

**RESEARCH EXPERIENCE**

**Co-Author – Book Chapter on Federated Learning at the Edge** June *2*025

**Book Title:** *Edge Computing – Latest Advancements, Challenges, and Applications* (IntechOpen)

**Chapter:** *Enhancing Privacy and Efficiency in Distributed AI Systems*

**Status:** Published, Online First | DOI: 10.5772/intechopen.1011986

* Contributed to the research and writing of a peer-reviewed book chapter exploring the integration of Federated Learning (FL) with edge computing.

**Co-Author – Journal Manuscript** June *2*025

**Title:** *AP2-AODV: A Predictive and Context-Aware Probabilistic Route Discovery Mechanism for Dynamic Wireless Networks*

**Journal:** *Concurrency and Computation: Practice and Experience (Wiley)*

**Manuscript ID:** CPE-25-2585

**Status:** Under Review

* Designed an adaptive route discovery protocol for dynamic wireless networks, integrating predictive mobility modeling with probabilistic routing to enhance stability and reduce latency.
* Contributed to simulation, Architectural Drawing, performance evaluation, and results interpretation.

**Main-Author – Journal Manuscript** September 2025

**Title:** Missing Data Imputation Techniques, Applications, Challenges and Innovations: A Review

**Journal:** International Journal of Information Technology & Decision Making

**Status:** Under Supervisory-Review

**Main-Author – Journal Manuscript** September 2025

**Title:** SWIFT: A Parallel, K-mer Filtered Smith-Waterman Extension for Fast and Accurate Local Sequence Alignment

**Journal:** International Journal of Information Technology & Decision Making

**Status:** Under Supervisory-Review

**MPhil Thesis Researcher** University of Ghana

**Title:** *A Hybrid Data Imputation Technique for Handling Missing Data in IoT Sensor Data Using LSTM and VAEs* February2025 - Present

* Conducting research on a new hybrid missing data imputation technique for handling missing data in IoT Sensor Data.
* Key tasks: Designing the overall architecture and flow for the hybrid missing data imputation algorithm.
* Focus areas: Exploring how to capture temporal dependence in time series data using LSTM and to reconstruct the overall distribution using VAEs.
* Conducting a review to identify existing techniques, their strengths and limitations, applications and trends and preparing a manuscript for submission to a peer-reviewed journal.

**Undergraduate Final Year Project Research** University of Ghana

*Research Participant*  March2023

* Conducted mini research as a partial fulfillment of my undergraduate studies.
* Developed a simple IoT-Based smart irrigation and environmental data gathering system

**WORK EXPERIENCE**

**University of Ghana, Legon – Department of Computer Science** Accra, GH

*Graduate Teaching and Research Assistant* October2023 – Present

* Delivered lectures and tutorials in Artificial Intelligence, Advanced Databases, and Distributed Systems, while mentoring final-year students on projects and presentation delivery, contributing to improved performance and research quality.
* Guided final-year students in their final projects and organized a Mock Final Presentation session to mentor them on effective presentation delivery and defense strategies.

**PKay Software Consultancy** Accra, GH

*Founder and Lead Consultant 2*023 – Present

* Architected and delivered large-scale enterprise platforms (admissions, business management, payment systems), demonstrating expertise in scalable software design, distributed systems, and real-world deployment.
* Applied agile methodologies and rigorous testing practices to ensure performance, maintainability, and stakeholder alignment.

**Iridis Labs** Accra, GH

*Software Developer 2*023 – Present

* Developed scalable web and mobile applications using React, Node.js, PostgreSQL, and Python, reducing frontend load times through code optimization.
* Collaborated in Agile teams to deliver client projects on time, conducting sprint planning and code reviews to ensure adherence to SOLID principles.

**Payhub Ghana Limited** Accra, GH

*Software Developer* 2021 – Present

* Designed and deployed a USSD platform for low-bandwidth financial transactions, enabling users to send money, purchase airtime, and trade vouchers securely.
* Reduced transaction latency through optimized session management and Redis caching.
* Integrated with mobile network operators via RESTful APIs, ensuring interoperability.

**Bricksky Software Development Company** Accra, GH

*Lead Software Developer* 2021 – 2024

* Oversaw end-to-end development and maintenance, of the Oysloe Marketplace App, a marketplace application for managing buying and selling on the platform.
* Automated price updates and inventory synchronization using Python scripting and third-party API integrations, reducing manual errors and ensuring real-time accuracy across product listings.

**SYMPOSIUM/HACKATHON/WORKSHOP**

**The 2025 Post-Graduate Students' Research Workshop** Department of Computer Science-UG

*Participant/Presenter* July 2025

* Presented research titled *Missing Data Imputation Techniques, Challenges, Applications and Innovations: A Review.*
* Presented findings on my review to faculty members and students at the conference. ***I won the 3rd Best Paper award***

**Nyansapo AI Symposium on Sustainable Development** French Embassy Ghana

*Participant*  October 2023

* Participated in a multidisciplinary AI symposium jointly organized by the Ghana Atomic Energy Commission and Université Paris-Saclay, with support from the French Embassy and AFD.
* The symposium focused on the responsible use of AI across sectors such as health, energy, and education, and emphasized international collaboration for sustainable development in Africa.
* Presented a proof of concept on how AI can be used to address the issue of electricity outages in the country.

**SKILLS**

**TECHNICAL SKILLS**

**LANGUAGES**

**FRAMEWORKS**

1. Programming
2. System Design and Architecture
3. Database Design
4. DSA
5. Technical Writing
6. Python
7. Javascript
8. SQL
9. Dart 1. Django 2. FastAPI

3. Flutter

4. React

**VOLUNTEER/LEADERSHIP EXPERIENCE**

**Department of Computer Science**  University of Ghana

*Students’ Mentor*September 2024 – Present

* Mentored students in various fields in technology such as Programming, UI/UX design and Project Management.
* I gave students the chance to do their internship with my startup.

**Bridge IT**  Biakoye District, Oti Region - Ghana

*Trainer/Tutor*  September 2020 – December 2020

* Delivered foundational IT training to basic-level students across the district.
* Over 500 students reached in a four-month workshop, significantly improving digital literacy.

**REFEREES**

Available upon request.