

Samuel Appiah Kubi

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SUMMARY

With a strong foundation in software development and artificial intelligence, I specialize in designing robust software systems, developing intelligent algorithms, and integrating backend solutions using Python, TensorFlow, Django, and Node.js. I have successfully built scalable, data-driven applications and implemented advanced AI frameworks to solve real-world challenges. My expertise spans software engineering, computer vision, and machine learning, with a proven ability to deliver innovative and impactful solutions in both research and professional settings.

RESEARCH INTEREST

- Software Engineering for Scalable and Intelligent Systems
- Computer Vision for Real-World Applications
- Machine Learning and AI for Intelligent Automation
- Optimizing Algorithms for Data-Driven Decision-Making
- Exploring Human-Centered AI Systems
- Cross-Disciplinary Research in AI and Automation

EDUCATION AND CERTIFICATIONS

Kwame Nkrumah University of Science and Technology (KNUST)
Bachelor of Science (BS) in Geomatic Engineering

Jan 2020 – Aug 2024

- Graduated with **First Class Honours**
- **Relevant Coursework:** Remote Sensing, GIS, Geodesy, Photogrammetry, Programming, Astronomy, Cadastral Survey, Engineering Survey, and Cartography

Expertise

- **Geographic Information Systems (GIS):** Advanced spatial data analysis and mapping
- **Machine Learning and AI:** Proficient in TensorFlow, Scikit-learn, and data-driven AI models
- **Python Programming:** Focus on software development and automation
- **Remote Sensing Applications:** Expertise in satellite image processing and analysis
- **Database Management Systems:** Advanced PostgreSQL and MySQL for spatial and non-spatial data

LANGUAGES

Languages

- **English:** Fluent (Professional Proficiency)
- **French:** Intermediate (Conversational)
- **Twi:** Native

RESEARCH EXPERIENCE

Phone Camera Calibration for Mapping Applications

[Github Link](#) 

Technologies: Geospatial Data, Advanced Calibration Methods, Chessboard, OpenCV-Python and Matlab

Supervisor : Prof. Samuel Ato Andam-Akorful

- Improved geospatial accuracy of images captured by phone cameras, crucial for reliable mapping.
- Applied correction algorithms to mitigate lens distortions, ensuring high positional accuracy.
- Utilized cutting-edge calibration techniques to refine camera parameters.

Pothole Detection App and Reporting - Application of the Phone Camera Calibration

May 2023 – August 2023

Technologies: YOLOv8, Image Recognition, Data Logging

- Enabled users to capture and upload images/videos of potholes for analysis.
- Implemented real-time detection and automated data logging including pothole type, dimensions, and location.

TEACHING EXPERIENCE

Peer Tutor and Motivator

Basic School to Tertiary Level

Demonstrated strong learning abilities by quickly mastering complex concepts and sharing this knowledge with peers. Organized and led study sessions for classmates, coursemates, and other schoolmates to simplify challenging topics, enabling them to better understand and succeed academically.

- Created and facilitated study groups to address difficult coursework, fostering collaborative learning environments.
- Provided personalized support to students struggling with specific subjects, breaking down concepts into easily digestible parts.

- Motivated peers by offering academic guidance and encouragement, helping them improve their confidence and academic performance.

CONFERENCE AND PRESENTATION

Invited Speaker and Poster Presenter

Young Surveyors Conference – Launch of GhIS-SS Mobile App

Technologies: Flutter (Frontend), Django (Backend) and Firebase

- Delivered a talk and poster presentation showcasing the development and functionalities of the GhIS-SS Mobile App for both Android and iOS platforms.
- Demonstrated how the app supports the Ghana Institution of Surveyors Students Society by integrating event calendars, news updates, and member communication tools.
- Launched the app to attendees at the conference.

PROFESSIONAL EXPERIENCE

Software Engineer

Dec 2023 – Present

Afarinick Company Limited, Ghana

- Developed scalable and dynamic websites using JavaScript, Django, Python, and jQuery.
- Integrated AWS for cloud services and deployment to enhance web performance and accessibility.
- Collaborated with teams to optimize user experience and ensure responsive designs.

Software Engineer - Mobile Developer

Aug 2023 – Sept 2023

TRECK Innovation Challenge, Ghana

- Designed and developed a Pothole Detection and Reporting mobile app using Flutter and Dart.
- Integrated AI models for real-time and static image pothole detection with location data.
- Implemented multimedia capture, geolocation features, and seamless RESTful API integration for data reporting.
- Ensured backend efficiency using Django and PostgreSQL, delivering a scalable and innovative mobile solution.

Software Engineer - Mobile App Developer

Sept 2023 – Present

GhIS-SS Mobile Application Project

- Designed and developed the GhIS-SS mobile app using Flutter to streamline communication and resources for surveyors.
- Integrated geolocation, real-time updates, and user-friendly interfaces for enhanced usability.
- Leveraged backend services with Django for efficient data management and secure user authentication.

- Delivered a comprehensive mobile solution tailored to the needs of survey professionals.

Assistant Highway Engineer (Intern)

Joshop Construction Company, Kumasi, Ghana

Sept 2023 – Oct 2023

- Collaborated on highway and urban road projects, contributing to planning, design, and analysis.
- Utilized GIS software (QGIS, ArcGIS Pro) for spatial analysis, mapping, and drafting.
- Conducted field surveys and assisted in preparing engineering reports and presentations.

Assistant Mine Surveyor (Intern)

Galiano Gold Mines (Asanko Gold Ghana Limited)

Oct 2023 – Nov 2023

- Conducted topographic and underground surveys using Total Stations, GPS, and laser scanners.
- Processed and analyzed survey data to create accurate maps of mine sites.

LEADERSHIP EXPERIENCE

Judicial Committee Member, GhIS-SS

- Serve on the Judicial Committee, overseeing the enforcement of the Ghana Institution of Surveyors Students Society (GhIS-SS) constitution and regulations.
- Collaborate with other committee members to resolve internal disputes and maintain a fair and transparent system for addressing member grievances.
- Contribute to the creation and revision of society policies, ensuring they align with current ethical and professional standards in the surveying industry.
- Conduct disciplinary hearings when necessary, ensuring due process and impartial judgment in all proceedings.
- Facilitate open communication between members and leadership, providing a platform for feedback and ensuring member concerns are addressed appropriately.
- Promote a culture of accountability and responsibility within the society, fostering a strong sense of community and professionalism.

PROJECTS

GhISS-SS Mobile App

[Github Link](#) 

Technologies: Flutter (Frontend), Django (Backend) and Firebase

- Developed a mobile application for the Ghana Institution of Surveyors Students Society.
- Implemented features like event calendars, news updates, and member communication.
- Django backend manages user authentication and content updates.

Admin Manager App for Afarinick Company Limited

[Github Link](#) 

Technologies: Kotlin and Flutter

- Designed and developed a Kotlin-based admin management application for Afarinick Company Limited.
- Enabled seamless administrative control for managing staff and resources.
- Ensured that only the company's specific applications could be installed on company phones and tablets, enhancing security and compliance.
- Backend integration allows real-time updates and data synchronization.

QR Code Scanner App for Afarinick Company Limited

[Github Link](#) 

Technologies: Flutter (Frontend), Django (Backend) and PostgreSQL

- Built a QR Code Scanner application to verify member details and inventory assets.
- Enabled quick database queries for user ID and asset ID validation by scanning QR codes.
- Ensured efficient data verification and management for the company's operations.

Afarinick Company Limited Website

[Website](#) 

Technologies: Python, Django (Backend) , PostgreSQL, and HTML/CSS (Frontend) and Javascript

- Led the development of Afarinick's company website for their GIS and mapping services.
- Built and maintained a robust Django backend and templates for managing dynamic content and user interactions.
- Integrated PostgreSQL for efficient data handling and content storage.
- Optimized the website for performance, ensuring secure and scalable functionality for Afarinick's GIS projects.

Tote Bag E-commerce Website

[Website](#) 

Technologies: Django, AWS, jQuery, Paystack

- Designed and developed a feature-rich e-commerce website specializing in tote bag sales.
- Built the backend using Django to ensure robust functionality and secure data management.
- Integrated Paystack for seamless and secure online payment processing.
- Utilized AWS for efficient hosting and scalable performance.
- Implemented jQuery for interactive UI elements and enhanced user experience.
- Focused on a visually appealing and user-friendly design to drive

sales and engagement.


Hospital Finder App

[Github Link](#) 

Technologies: Arcgis Pro , Flutter (Frontend), Django (Backend)

- Created a hospital locator app with Django backend for handling search queries.
- Integrated Google Maps API for real-time navigation to nearby hospitals.

Pothole Detection and Report App

[Github Link](#) 

Technologies: Python , Flutter (Frontend), Django (Backend), YOLOv8 (Computer Vision)

- Developed a pothole detection app using YOLOv8 for real-time detection.
- Django backend processes and stores user-submitted data, including pothole dimensions and locations.
- Enabled efficient reporting and tracking of road maintenance needs.

Crop Detection and Counting

[Github Link](#) 

Technologies: Python, OpenCV, TensorFlow, YOLOv8

- Implemented a computer vision application to detect and count crops using image processing.
- Applied object detection and segmentation techniques to improve detection accuracy.
- Automated crop monitoring to assist in agricultural management and yield estimation.

Sales Prediction with Machine Learning

[Github Link](#) 

Technologies: Python, scikit-learn, Pandas, NumPy

- Developed a machine learning model to predict future sales based on historical data.
- Utilized regression algorithms and data preprocessing techniques to enhance prediction accuracy.
- Analyzed key factors influencing sales trends to inform strategic decision-making.

Tableau Retail Sales Dashboard

[Github Link](#) 

Technologies: Tableau, SQL, Excel

- Created interactive dashboards using Tableau to visualize retail sales data.
- Provided insights into sales trends, product performance, and customer behavior.
- Enabled data-driven decision-making through comprehensive data analysis and visualization.

TECHNICAL SKILLS

- **Data Science & Machine Learning:** Python, R, MATLAB, TensorFlow, Scikit-Learn
- **Data Visualization & Analysis:** R, Python, Tableau
- **Computer Vision:** MATLAB, OpenCV, TensorFlow
- **Software Development:** Dart, Flutter, Django, React
- **GIS and Remote Sensing:** QGIS, ArcGIS Pro, AutoCAD , Drone2Map , Agisoft MetaShape
- **Version Control System:** Git, Jupyter, PyCharm, VSCode
- **Typesetting:** LaTeX, Microsoft Office , LibreOffice , Gimp
- **Operating System:** Windows, Linux
- **Data Science and Interactive Computing:** Jupyter, Google Colab
- **Databases:** PostgreSQL, MySQL , SQLite , MangoDB , Firebase RealTime Database

SOFT SKILLS

- Problem-solving and critical thinking
- Effective communication and teamwork
- Adaptability and continuous learning
- Leadership and project management
- Time management and multitasking

PROFESSIONAL INTEREST

I am deeply passionate about continuous learning, exploring interdisciplinary projects, and driving innovation in several key areas. My interests span across:

- **Artificial Intelligence (AI) and Machine Learning:** I am fascinated by the potential of AI and machine learning to revolutionize various industries. I focus on understanding and implementing advanced algorithms, developing predictive models, and leveraging data to uncover insights and drive decision-making.
- **Geographic Information Systems (GIS):** GIS technology intrigues me for its ability to analyze spatial data and visualize geographic information. I am dedicated to improving how spatial data is collected, processed, and interpreted to solve real-world problems, from urban planning to environmental monitoring.
- **Software Development:** The dynamic field of software development captivates me, especially as it intersects with AI and GIS. I am keen on designing and building software solutions that are both robust and user-centric, utilizing modern development practices and technologies to create impactful applications and systems.
- **Interdisciplinary Projects:** I thrive on projects that blend multiple disciplines, combining insights from different fields to address complex challenges. These projects often involve integrating diverse technologies and methodologies, fostering innovation, and pushing the boundaries of conventional approaches.

PROFESSIONAL MEMBERSHIPS

- **Ghana Institution of Surveyors Students Society - GhIS-SS**

Member, 2023 – Present

Actively participating in initiatives promoting surveying practices and contributing to events aimed at enhancing the skills and knowledge of members.