

# SETH BAAH KUSI

Full Stack Engineer | Blockchain Architect | AI/ML

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## TECHNOLOGY STACK

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Python, JavaScript, Typescript, Nodejs, Blockchain, SQL DBs, NoSQL DBs, DevOps, Git, - **Expert**

Rust, Golang, Julia, R, Flutter, AI/ML - **Intermediate**

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## WORK EXPERIENCE

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**Ejara (<https://ejara.io/>)**

**Head of R&D, DevOps & Security | Nov. 2021 - Present**

### Multi-blockchain Indexer

Developed an advanced indexer application to efficiently track transactions across multiple blockchain networks, catering to their demanding high-speed and high-bandwidth requirements. This robust application effectively monitors approximately 10 diverse blockchains and counting.

Key Contributions:

- Spearheaded the architectural design of the system, ensuring scalability, reliability, and performance.
- Engineered and optimized code structure that maximized efficiency and maintainability.
- Provided leadership and oversight to a dedicated team throughout the project's lifecycle.

The project has been seamlessly catering to users' needs and is presently in maintenance mode, reflecting its successful implementation and ongoing user satisfaction.

Technologies used: Blockchain, Postgres, Redis, Firestore, Node.js, Nest.js, Typescript, Javascript, GCP, Github, Devops, Bitcoin, Ethereum, Dogecoin, Near, Polygon, Solana, Stellar, Tezos, Tron, BSC, Cardano.

## Tokenized Bond

Led a groundbreaking project centered around the digital tokenization of government bonds on the blockchain, revolutionizing accessibility for users. This innovative solution seamlessly provides users with digital government bonds through a secure and transparent platform.

Key Contributions:

- Orchestrated the comprehensive architectural design of the entire system, ensuring a scalable and robust infrastructure.
- Designed and developed the smart contract, leveraging the power of blockchain technology to enable secure and efficient transactions.
- Provided guidance and supervision to a dedicated team in the development of the backend and frontend components.

This highly successful project now serves a substantial user base, facilitating thousands of transactions with remarkable efficiency and reliability

Technologies used: Blockchain, Postgres, Redis, Typescript, Javascript Node.js, Nest.js, GCP, AWS, Github, Devops, Bitcoin, Ethereum, Dogecoin, Near, Polygon, Solana, Stellar, Tezos, Tron, BSC, Cardano.

### **Broadcast API**

Led the development of a powerful API dedicated to broadcasting blockchain transactions across multiple blockchains, offering a seamless and reliable transaction experience. Notably, the project includes a gas station feature to ensure transactions have sufficient gas for successful execution.

Key Contributions:

- Crafted the architectural design of the project, encompassing efficient transaction broadcasting and gas management functionalities.
- Took charge of implementing the initial versions of the project, utilizing the versatility and speed of Node.js.
- Provided guidance and oversight to the team in completing subsequent versions and feature implementations.

The project has been successfully deployed and seamlessly integrated into the company's applications, delivering enhanced transaction capabilities.

Technologies used: Blockchain, Postgres, Redis, Typescript, Javascript Node.js, Nest.js, GCP, AWS, Github, Devops, Bitcoin, Ethereum, Dogecoin, Near, Polygon, Solana, Stellar, Tezos, Tron, BSC, Cardano.

### **Wallet Backup System**

Led the development of a robust system dedicated to enabling users to securely back up their mnemonic seed phrase secrets to the cloud, with a strong emphasis on delivering a seamless user experience. The project achieved the goal of providing a user-friendly solution without compromising on security measures.

Key Contributions:

- Designed the comprehensive architecture of the system, ensuring the highest level of security and simplicity for users.
- Developed cryptographic helper libraries in Dart specifically for the Flutter application, ensuring secure encryption and decryption of sensitive data.
- Provided guidance and oversight to the team responsible for implementing the remaining components of the system.

The project successfully met its objectives by offering a user-friendly interface that simplified the process of backing up mnemonic seed phrases to the cloud. By prioritizing both security and user experience, the system has proven to be a valuable asset for users seeking a secure and hassle-free backup solution.

Technologies used: Blockchain, Postgres, Redis, Typescript, Javascript Node.js, Nest.js, GCP, AWS, Github, DevOps, Dart, Flutter, Vault, Cryptography.

### **Turing.com LLC (<https://www.turing.com/>)**

#### **Remote Software Engineer, Full Stack | Oct. 2019 - Nov. 2021**

##### **Power AI**

Played a pivotal role as a full-stack developer within a team responsible for developing a dashboard for an AI product. The web application allowed subscribed users to log in, access the product, and track their modifications or edits effectively.

Key Contributions:

- Leveraged Python and Node.js to build robust backend APIs, ensuring seamless communication between the front-end and back-end components.
- Collaborated on the development of front-end features using the Vue.js framework, creating a dynamic and user-friendly interface for users to interact with the AI product.
- Ensured that user modifications and edits were accurately tracked and logged, providing transparency and accountability within the dashboard.
- Actively participated in the team's efforts, contributing to code reviews, bug fixes, and enhancements to maintain code quality and optimize performance.

The project's success is evidenced by its ability to serve high-profile clients. The developed dashboard empowers subscribed users to leverage the AI product efficiently while providing a seamless and intuitive user experience.

Technologies used: Typescript, Javascript, Vue.js, Python, GCP, Github, Firebase, DevOps, Postgres, Node.js, Express.js, Fast API.

##### **IP-linked Site Tracking**

Worked as a full-stack developer on the development of an application designed to track websites hosted and linked to a specific IP address, providing valuable insights for business decisions. The application

offered two key functionalities: retrieving all websites linked to a given IP address and obtaining the IP address of a website to discover other sites associated with it.

Key Contributions:

- Built a robust Django-based backend application, ensuring efficient data management and seamless integration with external APIs and databases.
- Developed a user-friendly front-end dashboard using Bootstrap, enabling intuitive navigation and data visualization for effective decision-making.

The project was successfully completed, delivering a powerful tool that significantly contributes to day-to-day business decisions. By providing insights into website hosting and linkages, the application empowers users to make informed choices based on a comprehensive understanding of website relationships.

Technologies used: Python, Django, Github, AWS, Javascript, HTML, CSS, Redis, Bootstrap, Celery, Postgres.

### **Static Website Generator**

Contributed as a full-stack developer within a collaborative team to develop a static website generator with CMS functionality and extensive settings. The project incorporated a Django-based backend and a Vue.js-based front-end, combining the strengths of both technologies.

Key Contributions:

- Collaborated effectively with team members to collectively design and implement the system, ensuring seamless integration of back-end and front-end components.
- Leveraged Django's powerful features to develop the backend, enabling efficient content management and flexible settings customization.
- Utilized Vue.js on the front end to create a dynamic and interactive user interface, enhancing the overall user experience.
- Actively participated in code reviews, conducted testing, and implemented enhancements to ensure code quality, performance, and stability.

The project's successful completion is a testament to the team's combined efforts and expertise. The resulting static website generator with CMS functionality and extensive settings provides users with a robust and customizable solution for creating and managing their websites efficiently.

Technologies used: Python, Django, Github, AWS, Javascript, HTML, CSS, Redis, Bootstrap, Celery, Postgres.

### **Ejara**

**Blockchain Developer | Jan. 2020 - Dec. 2021**

## **Blockchain Wallet**

Led the development of a non-custodial blockchain wallet mobile app that revolutionized the buying and selling of cryptocurrencies through its secure and user-friendly platform.

Key Contributions:

- Developed a robust blockchain library in Flutter, utilizing native Kotlin and Swift libraries to ensure seamless integration with the respective platforms.
- Implemented a backend application using Express.js and Postgres to fetch and update user balances and transaction history, enhancing the app's functionality and real-time data synchronization.
- Deployed the backend on AWS EC2 servers, leveraging GitHub's automatic deployment and testing capabilities for efficient and reliable updates.
- Configured the Grafana dashboard to extract meaningful insights from the database, enabling data-driven decision-making and performance optimization.

As a result of these efforts, the mobile app has garnered significant traction, boasting a user base of over 100,000 individuals who rely on the app for secure and convenient cryptocurrency transactions.

Technologies used: Swift, Flutter, Dart, Firebase, Node.js, PostgreSQL, Kotlin, AWS, NGINX, Grafana, Github, Express.js, Blockchain, DevOps, Bitcoin, Ethereum, Dogecoin, Near, Polygon, Solana, Stellar, Tezos, Tron, BSC, Cardano.

## **Safechain**

Led the development of a blockchain-based project aimed at digitally tracking authentic products using QR codes and blockchain verification

Key Contributions:

- Created a blockchain smart contract on the Tezos blockchain, ensuring secure and tamper-proof verification of product authenticity through QR codes.
- Developed a robust node.js backend utilizing Express.js and MongoDB, enabling seamless integration with the smart contract and efficient data management.
- Deployed the backend on AWS EC2 servers, ensuring scalability and reliable performance for the prototype.

The successful launch of the project's prototype signifies its potential to address the issue of product authenticity through blockchain technology. By leveraging the Tezos blockchain, implementing a secure backend, and deploying on AWS EC2 servers, the project demonstrated its viability and provided a solid foundation for further development and expansion.

Technologies used: Swift, Flutter, Dart, Node.js, PostgreSQL, Kotlin, AWS, NGINX, Grafana, Github, Express.js, Blockchain, DevOps, Tezos, MongoDB.

## **Africaniz**

### **Senior Software Engineer, Full Stack | Jan. 2018 - March 2019**

#### **E-commerce Website**

Designed and developed an e-commerce website with a focus on creating a simple yet elegant user interface and incorporating social media features. As a full-stack developer, I took charge of both the backend and front-end components, utilizing Vue.js for the front-end and Python Falcon for the back-end.

Key Contributions:

- Designed and implemented a visually appealing user interface, ensuring a seamless shopping experience for customers.
- Utilized Vue.js to build a responsive and interactive front-end, offering intuitive navigation, product browsing, and social media integration.
- Developed the backend using Python Falcon, enabling efficient data management, secure user authentication, and smooth transaction processing.
- Collaborated with contractors to ensure the successful completion and handover of the fully functional e-commerce website.

Despite the unfortunate circumstances that led to the company's inability to continue operating, the project stands as a testament to the successful development of a sophisticated e-commerce platform. The website's elegant UI, social media features, and seamless functionality would have provided an exceptional online shopping experience for customers had the company continued its operations.

Technologies used: Python, Vue.js PostgreSQL, Github, Heroku, Python Falcon.

## **PaperLess Softwares (<https://paperlesstech.xyz/>)**

### **Senior Software Engineer, Full Stack | Dec. 2017 - Jun. 2023**

#### **Soccersm (<https://soccersm.ai/>)**

Led the end-to-end development of an AI platform specifically designed to provide accurate predictions on football games.

Key Contributions:

- Spearheaded the development of an advanced AI algorithm that powers the prediction engine, leveraging expertise in machine learning and data analysis.
- Demonstrated exceptional leadership skills by fostering a collaborative and innovative team environment, providing guidance, mentorship, and technical expertise to drive growth and ensure efficient project execution.
- Oversaw the end-to-end development process, from concept to product launch, ensuring meticulous planning, resource allocation, and effective communication to deliver projects on time and within budget.

- Committed to continuous improvement, staying informed of the latest advancements in AI technology, and implementing enhancements to optimize prediction accuracy and enhance user experience.
- Played a pivotal role in the success of the platform, contributing to the development of a robust AI algorithm, leading teams to achieve objectives, and delivering high-quality projects.

Through my contributions to AI algorithm development, team leadership, project execution, and commitment to continuous improvement, I have played a crucial role in the success of the platform.

Technologies used: Python, Fast API, Javascript, Typescript, Node.js, Nest.js, React, PostgreSQL, Redis, Celery, Firebase, AI, ML.

### **Ballotbloc (<https://ballotbloc.com/>)**

Led the development of a website aimed at organizing votes powered by blockchain technology.

Key Contributions:

- Designed the overall architecture of the system, ensuring scalability, security, and efficient vote management.
- Designed and implemented the blockchain component, leveraging its decentralized nature to provide transparency and immutability to the voting process.
- Supervised a team of developers throughout the implementation phase, ensuring adherence to the architectural designs and timely delivery of project milestones.
- Assisted in building complex aspects of the system using Node.js, leveraging its capabilities to handle server-side functionalities and ensure seamless integration with the blockchain.
- Completed the development phase of the project, and it is currently undergoing beta testing to refine and validate its functionality.

The successful completion of the project signifies the successful integration of blockchain technology into the voting process. By designing the system architecture, implementing the blockchain, supervising the development team, and contributing to the complex aspects of the system using Node.js, we created a robust and secure platform for organizing votes. The ongoing beta testing will further validate the system's capabilities and ensure its readiness for deployment.

Technologies used: Javascript, Typescript, Blockchain, AWS, PostgreSQL, Firebase

### **Biggirlsrise (<https://biggirlsrise.auction/>)**

As the lead developer for the "Biggirlsrise" NFT project, I successfully designed and built both the website and the NFT smart contract.

Key Contributions:

- Designed and implemented a robust NFT smart contract using the Ethereum blockchain. This smart contract facilitates the creation, ownership, and trading of unique digital assets, ensuring their authenticity and security.
- Developed a backend system utilizing Node.js to interact with the smart contract specifically for the minting process. This backend functionality enables users to seamlessly mint new NFTs, ensuring a smooth and user-friendly experience.
- Oversaw a team of developers who worked on building the remaining components of the project. Through effective supervision and coordination, we ensured the timely completion of all project deliverables.
- The project has been successfully deployed and is currently serving both the client and users, providing them with a seamless and secure platform to engage with NFTs

The successful execution of the "Biggirlsrise" NFT project demonstrates the effectiveness of my team's collective efforts. By designing and building a reliable NFT smart contract, developing a backend system for minting, and supervising the overall project, we have successfully met the needs of the client and provided users with a valuable platform to explore and interact with NFTs.

Technologies used: Blockchain, Ethereum, PostgreSQL, Github, DevOps, NFT, AWS, Firebase.

### **Caretaker (<https://github.com/baahkusi/caretaker>)**

Successfully designed, developed, and delivered a comprehensive point-of-sale software solution capable of operating as both a desktop application and a web application.

Key Contributions:

- Utilized Python Django as the backend framework to handle core functionalities such as data management, transaction processing, and inventory tracking.
- Integrated Webix UI, a powerful JavaScript UI library, to create an intuitive and visually appealing user interface, ensuring a seamless and efficient user experience.
- Employed an embedded browser to enable the desktop application to run with native-like capabilities, providing a consistent and familiar interface to users.
- Successfully completed the entire project, meeting all requirements and delivering a fully functional point-of-sale software solution.

The successful completion and sale of the point-of-sale software to multiple clients attest to its quality and efficacy. Through my expertise in Python Django, Webix UI, and desktop application development, I created a versatile solution that empowers businesses with robust point-of-sale capabilities.

Technologies used: Python, Django, SQLite, MySQL, PostgreSQL, Javascript, HTML, CSS, Github, Heroku, Webix UI.

### **Websites**



Successfully designed, developed, and deployed tailor-made websites for various company clients, accumulating a portfolio of approximately 15 to 20 completed projects.

Key Contributions:

- Collaborated closely with clients to understand their unique requirements, goals, and brand identity, ensuring the websites aligned with their vision.
- Created custom designs that reflected each client's specific industry, target audience, and business objectives.
- Developed websites using industry-standard technologies and frameworks, incorporating responsive design principles for optimal user experience across devices.
- Implemented functionality and features tailored to the client's needs, such as e-commerce integration, content management systems, and interactive elements.
- Deployed the websites to hosting environments, ensuring seamless performance, security, and reliability.

The successful completion and deployment of 15 to 20 client websites demonstrate my ability to deliver tailored solutions that meet the specific needs of diverse businesses. Each website represents a unique project that showcases my expertise in web design, development, and deployment, as well as my commitment to client satisfaction and delivering high-quality online experiences.

Technologies used: HTML, CSS, Heroku, Javascript, Github, Python, AWS, Firebase, Ghost CMS, PostgreSQL, MySQL.

## **Freelancer**

### **Software Engineer, Full Stack | Jan. 2015 - Dec. 2017**

#### **Vehicle Fleet Management System**

Contributed as a full-stack developer on a desktop application designed to assist fleet owners in effectively managing expenses, revenue, and drivers associated with their commercial vehicles. Leveraging Python Django for the backend and implementing the front end using vanilla HTML, CSS, and JavaScript, we successfully completed the project and delivered it to the client, who utilized it for several years.

Key Contributions:

- Worked collaboratively as a full-stack developer to design and develop the desktop application, ensuring seamless integration between the backend and frontend components.
- Utilized Python Django to build a robust backend that facilitated efficient data management, expense tracking, revenue analysis, and driver management functionalities.
- Implemented a user-friendly front end using HTML, CSS, and JavaScript to provide an intuitive and visually appealing interface for fleet owners to access and analyze essential information.
- Actively participated in testing, bug fixing, and optimization to deliver a high-quality and reliable desktop application.

Technologies used: Python, Django, Javascript, CSS, HTML.

### **School CMS**

Single-handedly developed a CMS website designed specifically for creating websites tailored to schools. As a full-stack developer, I utilized PHP for the backend and implemented the front end using vanilla HTML, CSS, and JavaScript.

Key Contributions:

- Developed the entire CMS website, encompassing both the backend and frontend components, to provide schools with a user-friendly platform for creating and managing their websites.
- Utilized PHP for the backend, ensuring seamless data management, content creation, and customization capabilities for school administrators.
- Implemented the front end using HTML, CSS, and JavaScript, focusing on delivering an intuitive user interface and engaging user experience.

Technologies used: HTML, CSS, PHP, Javascript, MySQL.

### **Insurance Simulator**

Contributed as a full-stack developer within a team to create an insurance simulator website aimed at helping users gain a better understanding of insurance concepts through interactive gameplay. Leveraging PHP for the backend and implementing the front end using vanilla HTML, CSS, and JavaScript, the project successfully served its intended purpose.

Key Contributions:

- Collaborated with the team to conceptualize and develop the insurance simulator website, ensuring seamless integration of the backend and frontend components.
- Utilized PHP to build a robust backend, enabling efficient data processing, user management, and simulation logic.
- Implemented the front end using HTML, CSS, and JavaScript to create an engaging and interactive user interface, facilitating an immersive learning experience.
- Actively participated in testing, bug fixing, and code optimization to ensure a high-quality and user-friendly simulator.

Technologies used: HTML, CSS, PHP, Javascript, MySQL.

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## **EDUCATION**

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### **African Institute for Mathematical Sciences - AIMS, South Africa, 2018 - 2019.**

- MSc. in Mathematical Sciences.

- Some relevant courses taken were Algebra, Algebraic Number Theory, Algebraic Biology, General Relativity, Julia and Differential Equations, Random Systems and Information Theory, Insurance Economics, Python, Julia, R code, and Data Analytics.

**Kwame Nkrumah University of Science and Technology - KNUST, Ghana,  
2013 - 2017. GPA - 3.8**

- BSc. in Actuarial Science.
- Some relevant courses were Functional Analysis, Linear Algebra, Mathematical Analysis, Numerical Methods, Time Series Analysis, Forecasting, Stochastic Processes, Mathematics of Finance and Investment, Matlab, R code, Statistics, and Regression analysis.

