

# Anyega Alex Kamau

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## SUMMARY

**Full-Stack Engineer (React, Django) with 5+ years of experience building scalable, AI-powered web applications used in production environments.** Strong backend foundation with expertise in performance optimization (improved load times by 35%), real-time data systems (PostgreSQL, Redis), and NLP-driven analytics pipelines. Proven ability to design, build, and deploy end-to-end systems that transform complex data into reliable, user-focused products.

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## EXPERIENCE

### Full-Stack Developer

#### Digital Dynamo Kenya

February 2025 – Present, Nairobi, Kenya

- Built a Django/React.js stock prediction platform using NLP (FinBERT, spaCy) to analyze news headlines, achieving 72% sentiment analysis accuracy and integrating PostgreSQL/Redis for real-time data processing (GitHub).
- Designed Budget Buddy, an AI-driven budgeting app with React.js/Firebase, launching a responsive landing page that achieved 60% user engagement during beta testing (GitHub).
- Developed a Cost-of-Living Explorer tool with Python/D3.js, optimizing query performance by 50% via Redis caching and PostgreSQL for dataset storage (GitHub).
- Standardized website CSS/HTML for consistent fonts/formatting, boosting customer satisfaction by 50%.
- Improved SEO rankings through keyword optimization, driving a 50% increase in organic traffic and a 40% rise in CTR. Reduced page load times by 35% via image compression and code refactoring.
- Resolved bugs, broken links, and formatting issues, resulting in a 60% surge in user engagement (GoogleAnalytics).
- Analyzed competitor metrics to strategically add hyperlinks, increasing conversion rates by 15%.

### Blockchain Software Developer

#### Vyudu Inc.

February 2025 - September 2025, United States

- Architected and deployed a modular **API orchestration framework** enabling priority-based routing and multi-layer fallback (API → cache/DB → LLM → fail-safe), improving system resilience and service continuity.
- Designed and implemented **cost-governance controls** for third-party providers (HuggingFace, Chainlink), enforcing environment-configured budget caps and automated provider skipping to prevent overspend.
- Engineered rate-limit-resilient API handling with retry logic and exponential backoff for 429 errors, increasing reliability under high-load and degraded network conditions.
- Integrated LLM-based intelligent fallback with structured prompt templates, schema validation, and multi-stage response sanitization to ensure safe, deterministic outputs.
- Refactored and standardized blockchain service handlers (XRPL, Wormhole, Flare), introducing consistent response contracts, improved timeout handling, and graceful degradation strategies.
- Resolved critical production runtime failures across analytics dashboards by implementing defensive state initialization and fault-tolerant data handling, eliminating crash-related incidents.
- Developed and maintained a comprehensive automated test suite (unit, integration, system) using pytest with dependency injection and mocks, achieving 100% pass coverage for orchestration components.
- Delivered production-grade infrastructure with clear separation of concerns, structured logging, regression-safe deployments, and no measurable performance degradation across environments.

### Technical Support Engineer (Intern)

#### Kingdom Sacco Society Limited

June 2024 – August 2024, Nairobi, Kenya

- Provided frontline technical support for staff across core banking and mobile banking systems, minimizing downtime and maintaining operational continuity.
- Diagnosed and resolved hardware, software, and network-related issues, improving system reliability and user productivity.
- Supported mobile banking platform troubleshooting, ensuring uninterrupted member transactions and secure access.
- Assisted in maintaining internal IT infrastructure, including workstation setup, user account configuration, and system updates.
- Collaborated with the ICT team to streamline support workflows and improve response time to service requests.
- Conducted routine system checks and preventive maintenance to reduce recurring technical issues.
- Maintained accurate documentation of incidents and resolutions to improve future troubleshooting efficiency.
- Recognized for professionalism, integrity, and punctuality, earning formal commendation from management.

### Front-End Developer

#### Lilli London

February 2021 – September 2021, United Kingdom

- Successfully created and deployed dynamic, user-friendly web pages utilizing HTML, CSS, JavaScript, and jQuery, resulting in a remarkable 35% decrease in page load time and an impressive 60% increase in user engagement, as confirmed through Google Analytics. Enhanced webpage

- functionality across multiple browsers and implemented optimized images, resulting in a significant 40% reduction in file sizes.
- Enhanced user experience and engagement by seamlessly integrating contact forms, feedback surveys, and e-commerce functionalities into existing websites.
- Utilized JavaScript library and APIs, resulting in a significant 10% surge in user base.
- Aligned with project managers to set ambitious yet attainable coding milestones for pre-release software project development, resulting in a 10% boost in productivity and elevated software quality.
- Enhanced web page loading speed by 50% through the strategic implementation of code-style guidelines, leveraging the power of Git version control for seamless structural integrity.
- Modernized and optimized outdated code bases, resulting in cost savings and enhanced functionality.

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## PROJECT

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### Budget Buddy – AI-Driven Personal Finance & Budgeting Platform

Independent Project · [budget-buddy-rose-phi.vercel.app/](https://budget-buddy-rose-phi.vercel.app/) · November 2025 – February 2026

- Designed and developed an **AI-powered budgeting application** to help users track expenses, set financial goals, and derive data-driven financial decisions.
- Built a **responsive React.js frontend** with a focus on usability, clarity, and intuitive financial workflows.
- Implemented a **Firestore-backed backend** for authentication, data storage, and real-time updates.
- Engineered **smart budgeting logic** to generate personalized budget recommendations based on income and spending behavior.
- Developed **custom expense categorization**, allowing users to tailor categories while leveraging pattern-based suggestions.
- Created **spending trend visualizations** to highlight monthly and category-based financial behaviors.
- Integrated a **goal tracking system** enabling users to define targets, monitor progress, and receive actionable reminders.
- Incorporated advanced machine learning algorithms to deliver predictive insights and actionable financial recommendations, elevating user engagement and facilitating smarter money management.

### Global Cost-of-Living & Economic Comparison Platform

Independent Project · [github.com/AnyegaAlex/Cost-of-Living-Explorer](https://github.com/AnyegaAlex/Cost-of-Living-Explorer) · February 2024 – February 2026

- Designed and developed a **full-stack web application** to compare global cost-of-living metrics using real economic indicators.
- Built a **Django REST backend** to ingest and normalize macroeconomic data from the **Trading Economics API**.
- Implemented a **React-based frontend** featuring interactive maps, charts, and tables for intuitive data exploration.
- Visualized inflation, wage, and currency trends using **dynamic line charts** and comparative tables.
- Integrated **geospatial mapping (Leaflet)** to display country-level economic indicators interactively.
- Enabled **multi-country comparison**, allowing users to analyze economic conditions across regions side-by-side.
- Applied **API usage optimization** and free-tier constraints handling to ensure reliable data delivery.
- Structured the application with modular components to support scalability and future country expansion.
- Improved data retrieval efficiency through optimized API calls and frontend state management.
- Led the project end-to-end, covering system design, backend APIs, frontend visualization, and deployment planning.

### Machine Learning Stock Prediction Platform

Independent Project · [huggingface.co/spaces/AnyegaAlex/stock-prediction-analytics](https://huggingface.co/spaces/AnyegaAlex/stock-prediction-analytics) · April 2024 – September 2025

- Architected and deployed a machine learning-driven stock prediction platform to forecast next-day price movements using technical indicators and news sentiment.
- Engineered predictive features including **RSI, MACD, Bollinger Bands, and moving averages** to enhance model signal quality.
- Integrated transformer-based sentiment analysis using **DistilBERT**, achieving **92% sentiment classification accuracy**.
- Trained a **HistGradientBoostingClassifier** with time-series cross-validation, delivering **75% F1-score** and **82% test accuracy**.
- Built batch prediction capabilities supporting CSV uploads for scalable portfolio-level forecasting.
- Implemented **SHAP-based explainability**, enabling transparent interpretation of model predictions.
- Developed interactive visualizations for sentiment trends and prediction outputs to support data-driven decision-making.
- Optimized memory usage through efficient data typing and caching strategies for large historical datasets (2008–2023).
- Deployed a production-ready interface using **Gradio**, improving accessibility for non-technical users.
- Led full lifecycle development — from data engineering and model training to deployment and user experience design.

### Sentiment-Driven Stock Price Prediction Using News Headlines

Personal Project · [sentiment-driven-stock-price-predic.vercel.app/](https://sentiment-driven-stock-price-predic.vercel.app/) · November 2024 – August 2025

- Architected and deployed a real-time stock sentiment analysis platform using NLP and machine learning to predict price movements from financial news.
- Engineered automated multi-source data pipelines integrating Alpha Vantage, Yahoo Finance, and Finnhub to ensure high data reliability.
- Implemented FinBERT-powered sentiment modeling achieving **92% classification accuracy** with contextual analysis.
- Designed asynchronous processing workflows with **Celery and Redis**, significantly improving system responsiveness and throughput.
- Built an interactive React dashboard enabling dynamic filtering, trend visualization, and confidence-based insights for investors.
- Developed SHA-256-based deduplication to maintain dataset integrity and prevent redundant processing.
- Containerized services with Docker to support scalable and consistent deployments.

- Optimized backend queries and caching strategies to enhance performance under real-time workloads.
- Created an end-to-end ML pipeline using TF-IDF and Logistic Regression with structured evaluation metrics.
- Delivered a production-ready full-stack system spanning data ingestion, model training, API architecture, and frontend visualization.

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## EDUCATION

### Bachelor of Science in Computer Science

Maasai Mara University · Narok, Kenya · 2025 · Second Class Upper Division

- Coursework: Data Structures and Algorithms, Machine Learning, Database Management Systems, WebDevelopment, Artificial Intelligence
- Awards: Google Analytics 4 Certification, Google Digital Garage Certification, Commendation for Integrity and Dedication (Kingdom Sacco Attachment).

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## CERTIFICATIONS

### Google Analytics Individual Qualification

Google · 2023

- Demonstrates proficiency in web analytics, data interpretation, and user behavior analysis. Strengthens my ability to make data-driven decisions, optimize digital platforms, and measure performance, skills directly applicable to technology-focused and analytical roles.

### Learn Elementor & WordPress, for Startups & Freelancers

Udemy · 2024

- Provided hands-on experience in designing, building, and launching responsive websites using WordPress and Elementor. Enhanced my capabilities in UI/UX, digital product delivery, and client-focused development, complementing my Computer Science background with real-world implementation skills.

### Google Digital Marketing & E-commerce Certificate

Google · 2024

- Built practical skills in digital strategy, data analytics, SEO/SEM, and customer engagement. This complements my Computer Science background by enabling me to approach technology and product development with both technical and growth-oriented perspectives.

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## SKILLS

React.js, JavaScript (ES6+), Python, Django, REST APIs, HTML5, CSS3, TailwindCSS

Machine Learning, NLP (spaCy, FinBERT, DistilBERT), Scikit-learn, TensorFlow

PostgreSQL, Redis, Docker, CI/CD

D3.js, Chart.js, Real-Time Data Processing, API Integration, Asynchronous Workflows

Problem Solving, Analytical Thinking, Communication, Collaboration, Adaptability

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## REFERENCES

### Joel Saitoti

CEO · Kingdom Scco Society Limited · joelsaitoti@kingdomsacco.com