Samuel N. Oyaro

oyarosammy@gmail.com | Nairobi, KE | linkedin.com/in/sam-ire

Education

BSc. Telecommunications and Information Engineering, Jomo Kenyatta University of Agriculture and Technology
Relevant Coursework: Artificial Intelligence; Database Management; Network Security & Cryptography; Object-Oriented Programming; Software Development; Digital Systems Design; Digital Electronics; Embedded Systems; Project Management

Work Experience

AI Agentic Engineer Intern, Nethermind   Jan 2025 – Apr 2025 | London, UK
- Engineered autonomous agents with LLM-driven reasoning cycles, modular toolchains, and orchestration ADKs.
- Collaborated ZK engineering research teams to prototype agent orchestration strategies across distributed environments.
- Developed prompt strategies, embedded toolchains, and vector-assisted retrieval to augment agent capabilities.
- Built evaluation pipelines to benchmark agent performance, cost efficiency, and alignment with user intent.
- Enhanced local agent infrastructure by testing emergent libraries, optimizing toolchains, and deploying modular agent nodes.
- Reviewed academic literature and emerging frameworks to identify scalable engineering solutions for agent orchestration.

Data Research Analyst, Securities.io   Jun 2022 – Sep 2023 | San Francisco, CA
- Implemented onchain data pipelines and extraction utilities for DeFi analytics, built dashboards to visualize protocol metrics.
- Led quantitative research on Layer 1/2 networks, synthesizing reports on gas economics, consensus, and crosschain activity.
- Authored technical publications on zk-proof systems, tokenomics, smart contract security, DeFi exploits and compliance.
- Delivered metric-based narratives and external-facing communication highlighting protocol and ecosystem milestones.
- Maintained contributor relationships and aligned reporting cadence with evolving strategic objectives.

Cloud/Machine Learning Trainee, Azubi Africa   Jan 2022 – Apr 2022 | Nairobi, KE
- Designed and provisioned cloud-native analytics pipelines and app stacks using AWS architecture best practices.
- Deployed models for image classification and computer vision applications, optimizing for accuracy and latency.
- Automated ML workflows from data ingestion to model serving using SageMaker, Step Functions, and CI/CD pipelines.
- Refined model performance through hyperparameter tuning, inference optimization, and model quantization.
- Implemented model-agnostic data pipelines using AWS microservices for low-latency, real-time inference.

IoT Systems Engineer Attachee, Gearbox   Feb 2021 – May 2021 | Nairobi, KE
- Prototyped motion-sensing IoT systems using Raspberry Pi/Arduino; integrated alert logic and edge processing.
- Validated sensor network designs via circuit simulation and proof-of-concept field testing.
- Configured Linux-based IoT gateways to bridge PLCs with telemetry and monitoring pipelines.
- Collaborated with mechatronics engineers in PCB design reviews and firmware development for application-specific ICs.
- Documented implementation progress and design trade-offs to streamline team alignment and internal information sharing.

IT Support Attachee,   Jul 2019 – Oct 2019 | Nairobi, KE
Ministry of Information, Communications and Digital Economy
- Automated system patching workflows using WSUS and MECM (formerly SCCM).
- Diagnosed network disruptions (DNS, SMTP) via Wireshark captures and traceroute-based packet path analysis.
- Deployed Cisco and Juniper network infrastructure; configured firewall rules, VLANs, and switch logic.
- Resolved application faults through log tracing and dynamic hotfix deployment strategies.

Projects

Agentic Orchestration and Workflow Automation Suite
AI agent management platform leveraging Next.js, TypeScript, and FastAPI. The platform orchestrates autonomous AI agents with workflow automation capabilities, integrating with Google Workspace, Slack, Notion, Telegram, GitHub, and LangFuse for observability. Features a distributed task processing architecture using Redis and MongoDB, with authentication via Okta.

Scalable Knowledge Graph for Scientific Publications
A high-performance multi-million-node Neo4j knowledge graph infrastructure, synthesizing academic metadata including cross-institutional author affiliations, multi-domain citation networks, and publication hierarchies. The graph powers semantic search systems through its dynamic relationship mapping capabilities, enabling pattern discovery across varied research disciplines. Combines GPT models with vector-indexed graph traversals in a RAG pipeline to power context-aware paper recommendations, surfacing latent interdisciplinary connections. Includes an analytical dashboard featuring network visualization and trend analysis tools.

Curated News Delivery Multi-Agent System
A Python-based News Aggregator system built using Google ADK. The system implements a workflow agent to control the execution of three sub-agents for news summarization, classification and analysis. The system interfaces with the Reddit API via PRAW library to retrieve news from user-specified or predefined subreddits. The project also features a custom script to programmatically patch a Windows-specific symbolic link issue within the ADK.

Additional Information

Languages — Python; TypeScript; JavaScript; Rust; SQL

Tools & Frameworks — Agents SDKs; LLM Orchestrators; LangFuse; Neo4j; SciPy; Graphiti; PyTorch

Cloud & DevOps — AWS; GCP; Docker; K8s; Terraform; Hardhat; ThingsBoard

Certifications/Learning Paths — Kubernetes and Cloud Native Associate; Oracle AI Vector Search Professional

Collaboration — Office 365; Google Workspace; Notion; JupyterLab

Interests — Reading Scientific Interdisciplinary Works