MESHACK OTIENO

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EDUCATION

Kirinyaga University   Aug 2019 - Oct 2023

  BSc Computer Science

Our Lady of Fatima Secondary   Feb 2015 – Nov 2018

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  High School

SKILLS

 Database: MongoDB, Firebase, MySQL, PostgreSQL

Languages: JavaScript, Typescript, Python

Frameworks: Express (Node.JS), React.js, and Next.js, Vue3, VueJS, Remix, Nest.js, TailwindCss, Open API

Tooling: Git and GitHub, Azure DevOps.

EXPERIENCE

Senior Software Developer – MedicinaChain, Nairobi Kenya   **Mar 2025 – Present**

- Led frontend development of a cutting-edge Hospital Management System (HMS) leveraging Blockchain (Ethereum/Solidity) to deliver secure, immutable medical records accessible via mobile app, reducing patient misdiagnosis by 30%+ and enabling seamless access to prescriptions/medicines.
- Architected scalable React/vite.js frontend with TypeScript for intuitive patient/doctor dashboards, real-time notifications, and KPI tracking (e.g., appointment analytics, vitals monitoring).
- Drove DevOps & security: Set up CI/CD pipelines with Azure DevOps/GitHub Actions, Docker containerization, encryption (AES-256), and compliance with GDPR/Kenya Data Protection Act.
- Collaborated with cross-functional teams to integrate third-party APIs (e.g., payment gateways, telehealth) and optimized performance for 50% faster load times.

Software Developer – MedicinaChain, Nairobi, Kenya   **April 2024 – Feb 2025**

- Built foundational full-stack MVP for Blockchain-powered HMS, enabling secure, mobile-accessible medical records via React.js frontend and Java(spring boot)backend, preventing misdiagnosis through immutable patient histories.
- Developed core features: Patient/doctor dashboards, appointment scheduling, prescription access, and initial pharmacy and inpatient modules.
- Integrated early ML prototypes (Python/Random Forest) for basic risk predictions, laying groundwork for AI consultant features.
- Contributed to UI/UX: Responsive designs (Material UI), data visualizations (Chart.js for vitals trends), and error handling (Sentry).
- Deployed initial version to Digital Ocean; gathered user feedback to iterate rapidly in startup environment.

Software Developer – TuzaPay, Kigali, Rwanda   **Sept 2024 – Dec 2024**

- Worked as full-stack developer to develop a high-frequency trading platform for African company shares, enabling real-time cross-border trades with secure wallets and market analytics, processing 50k+ daily transactions while ensuring <100ms latency.
- Architected scalable backend using Nest.js with PostgreSQL and Prisma ORM for efficient data modeling (users, trades, portfolios); implemented cron jobs for automated market data syncs, dividend calculations, and compliance reporting.
- Built dynamic Next.js/TypeScript frontend with React dashboards featuring real-time charts (Chart.js/Recharts), KPI trackers (trade volume, P&L), guided trade uploads, and responsive mobile views for seamless user experience.

- Integrated enterprise-grade monitoring & error tracking via Sentry, reducing bug resolution time by 70%; added comprehensive API documentation with Swagger/OpenAPI for seamless team handoffs and third-party integrations.
- Ensured top-tier security & scalability: Deployed JWT/OAuth auth, AES-256 encryption for sensitive financial data, and CI/CD pipelines (GitHub Actions/Docker) compliant with GDPR/Kenya Data Protection Act; optimized queries for 10x query performance.

Software Engineer – IBM Research Africa, Nairobi Kenya   **May 2023 – July 2023**

- Developed Machine Learning notebooks and scripts using Python Language

- Engineered advanced ML models using Random Forest Regressor (95% accuracy) and UNET for image segmentation, applied to real-world research in healthcare/sustainability.

- Trained and fine-tuned models on cloud GPUs, achieving 25% improvement in prediction precision through hyperparameter optimization and cross-validation.

- Integrated models into production pipelines with FastAPI endpoints, enabling real-time inference and API integrations for dashboards.

- Contributed to team code reviews and documentation, introducing Git workflows to streamline collaboration in a fast-paced research environment.

Full Stack Software Developer -- Rhions Lab Limited, Nyeri Kenya   **July 2022 – October 2022**

- Led high-impact tech stack migration: Transformed frontend from React to Remix/Next.js (with TypeScript) and backend from .NET to Nest.js/Node.js, cutting deployment time by 60% and boosting scalability.

  Enhanced error handling & debugging across full-stack, implementing custom logging (Winston), Sentry monitoring, and unit/integration tests (Jest/Vitest) for 99% uptime.

  Developed responsive UIs with Tailwind CSS and data visualizations (Chart.js) for admin dashboards and user analytics.

  Optimized database layer with MongoDB/PostgreSQL migrations, ensuring ACID compliance and seamless data flow for 5k+ users.

  Mastered 3+ new languages/frameworks (e.g., TypeScript, Remix) in 4 months, delivering production-ready features ahead of schedule.

PROJECTS

BlogSum – Lead Developer   **January 2023 – March 2023**
- Led end-to-end development of a modern blog SaaS platform supporting user-generated content, real-time notifications, messaging, and advanced search/pagination; handled 10k+ posts with <200ms query times.
- Built scalable React.js frontend with TypeScript, Material UI, and infinite scroll for seamless category browsing, liking/commenting, and responsive design across devices.
- Engineered Node.js/Express backend integrated with MongoDB for ACID-compliant data storage, JWT authentication, and RESTful APIs enabling cross-platform access.
- Implemented real-time features using Socket.io for live updates (e.g., new comments/notifications) and email integrations (Nodemailer) for user engagement.
- Optimized performance & security: Added Redis caching (50% faster loads), Sentry monitoring, rate limiting, and input sanitization compliant with GDPR standards.
- Deployed to Vercel with CI/CD via GitHub Actions; Live [Link](#)

School Dashboard – Lead Developer   **September 2023 – October 2023**

- Architected full-stack admin dashboard for school management, enabling teachers/admins to CRUD student records, track fee payments/statements, and search/filter 5k+ entries via interactive tables.
- Developed vanilla JavaScript frontend with Material UI and Chart.js for KPI visualizations (e.g., payment trends, enrollment stats) and exportable reports (CSV/PDF).
- Created Node.js backend with PostgreSQL for secure data handling, role-based access (RBAC), and audit logs ensuring data integrity for compliance.
- Integrated real-time updates with WebSockets for live fee notifications and admin approvals, reducing manual checks by 80%.
- Focused on scalability & UX: Implemented pagination/search debouncing, offline support (Service Workers), and encryption for sensitive student data.
- Production-ready deployment on Netlify/Heroku; Live:. [Link]

OnlineGroceryStore – Lead Developer   **May 2024 – June 2024**

- Spearheaded MERN-stack e-commerce SaaS for online grocery shopping, featuring wishlist, order tracking, ML-powered recommendations, and admin CRUD for 1k+ products.
- Designed Next.js/TypeScript frontend with Tailwind CSS, real-time cart updates, Stripe checkout, and dashboard analytics (sales KPIs, inventory levels).
- Built robust Nest.js backend with MongoDB/PostgreSQL, Prisma ORM, cron jobs for inventory syncs, and SendGrid for transactional emails (order confirmations).
- Integrated AI/ML recommendation engine using Python/Scikit-learn (collaborative filtering, 85% relevance) via FastAPI endpoints for personalized suggestions.
- Prioritized security & DevOps: OAuth/JWT auth, PCI-compliant payments, Dockerized CI/CD (GitHub Actions), and Sentry/monitoring for 99.9% uptime.
- Scalable & live: Handles high-traffic spikes;.   [Link]

LEADERSHIP AND COMMUNITY INVOLVEMENT

Club Associate – Computer Society of Kirinyaga   **January 2022 – October 2024**

- Helped organization of 20+ high-impact tech events/hackathons for 1,000+ students, focusing on full-stack dev (React/Node/Next.js), AI/ML integrations, DevOps (CI/CD/Docker), and startup pitching – resulted in 85% participant skill uplift & 50+ internships secured.
- Delivered 5+ keynote career talks to 50+ attendees, sharing personal journey (IBM, MedicinaChain, TuzaPay); provided 1:1 mentoring to 25+ juniors on GitHub portfolios, technical interviews, & freelancing.
- Architected & deployed club website/dashboard using Next.js/TypeScript + Supabase, featuring event calendars, resource libraries (tutorials/boilerplates), & real-time RSVPs – boosted engagement 4x (from 100 to 400 monthly users).
- Fostered collaborative culture: Introduced peer code reviews, Git workflows, & monthly hack nights; collaborated w/ 5+ universities for joint events, building regional tech network.

CERTIFICATION AND LICENSURE

Python for Data Science and Machine Learning Bootcamp, July 2023: Awarded Certificate: [Click Here]