FREDRICK WAMBUA MAKAU

Software Engineer | Backend Development & Quality Assurance

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PROFESSIONAL SUMMARY

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Software Engineer with a BSc in Computer Science from Egerton University and over two years of experience spanning backend development, API engineering, and software quality assurance. Currently a Software Quality Assurance Engineer at Transsion Holdings, testing mobile software across Android 15, 16, and 17, developing test cases, and collaborating with development teams to identify and resolve defects before release. Experienced in backend development using Python, Go, PHP, Django, Flask, and Laravel, with knowledge of RESTful APIs, GraphQL, gRPC, and relational and NoSQL databases, including PostgreSQL, MySQL, and MongoDB. Familiar with system design, asynchronous processing, caching, automated testing using Playwright and pytest, and application deployment using Docker, Microsoft Azure, and CI/CD pipelines. Combines software engineering knowledge with a quality-focused approach to building reliable, maintainable, and secure applications.

TECHNICAL SKILLS

Backend Development: Python, Golang (Go), PHP, Laravel, Django, Flask, FastAPI, RESTful APIs, GraphQL, gRPC, Protocol Buffers (Protobuf), authentication and authorization (JWT), microservices, asynchronous programming, concurrency, Swagger/OpenAPI, database integration, debugging

Testing & Test Automation: Playwright, pytest, Postman, functional testing, regression testing, compatibility testing, integration testing, automated test design and execution, test case development, defect identification, documentation, and reporting.

Database Management & Administration: MySQL and PostgreSQL (relational databases), MongoDB (NoSQL document database), IBM DB2, SQL, database schema design and normalization, query optimization, indexing, database migrations, replication, sharding, backup and recovery, database security, and performance monitoring.

System Design & Integration: System architecture, monolithic and microservices architectures, distributed systems, API design and integration, event-driven architecture, service-to-service communication, caching, load balancing, scalability, and fault tolerance.

Caching, Messaging & Performance: Redis, Celery, Apache Kafka, caching strategies, cache invalidation, background job processing, asynchronous task execution, and performance optimization.

Containerization & Orchestration: Docker, Docker Compose, Kubernetes, Helm, container registries, service discovery, autoscaling, rolling deployments, container networking, and container security.

CI/CD & Version Control: Git, GitHub, GitHub Actions, continuous integration and continuous deployment, automated testing, build automation, deployment pipelines, release management, and version control workflows.

Cloud Services, Media Management & System Administration: Microsoft Azure, Windows system administration, Cloudinary integration, cloud-based image and video storage, media optimization and transformation, content delivery networks (CDNs), LAN/WAN networking, and ICT infrastructure support.

Content Management Systems (CMS): WordPress administration, content publishing, theme and plugin configuration, user and role management, website customization, and CMS maintenance.

Deployment & Maintenance: Application and website deployment, web hosting, Nginx, Apache, web server configuration, domain and DNS configuration, SSL/TLS certificates, backups, security updates, performance optimization, troubleshooting, and ongoing maintenance.

Security & Reliability: Secure coding practices, secrets management, role-based access control (RBAC), API security, vulnerability scanning, HTTPS/TLS, high availability, disaster recovery, and performance monitoring.

Data Science & Analytics: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, exploratory data analysis (EDA), statistical analysis, data preprocessing, feature engineering, data visualization, and machine learning model evaluation.

Productivity & Other Tools: Microsoft Excel, Microsoft Dynamics 365 Business Central (AL), and Figma.

PROFESSIONAL EXPERIENCE

TRANSSION HOLDINGS, Nairobi, Kenya

Software Quality Assurance Engineer *Jul 2025 – Present*

- Test mobile software across multiple device models and Android 15, 16, and 17, verifying functionality, compatibility, stability, and performance before release.
- Design, write, and maintain detailed test cases and scenarios covering functional requirements, usability, stability, and cross-device compatibility.
- Identify, reproduce, and document defects with clear technical detail, working closely with developers to speed up root cause analysis and resolution.

Image Product Effect and Evaluation Specialist *Mar 2025 – Jul 2025*

- Carried out field-based user experience research and imaging evaluations across a range of mobile devices to assess camera and image performance.
- Analyzed image quality and performance data and prepared technical reports for engineering and product teams.
- Validated firmware builds and image quality across device configurations, reporting visual, imaging, and performance defects.
- Supported camera debugging and validation, including basic Auto White Balance tuning, with camera and firmware engineers.

SEVEN SS STARS, Nairobi, Kenya

Renewable Energy Sales Representative *Feb 2024 – Nov 2024*

- Consulted with customers to understand energy needs and recommended suitable renewable energy solutions within their budgets.
- Provided technical guidance and basic troubleshooting throughout the sales and after-sales process.
- Built lasting customer relationships through regular follow-up and responsive support while working toward sales targets.

TAITA TAVETA COUNTY GOVERNMENT, Voi, Kenya

ICT Volunteer *May 2023 – Oct 2023*

- Provided ICT support to staff across county departments, troubleshooting hardware, software, and networking issues.
- Supported hospital information systems, databases, and user accounts to keep daily operations running smoothly.
- Assisted with LAN and WAN configuration, CCTV projects, and server maintenance.

ICT Attaché *Jan 2023 – Apr 2023*

- Installed, configured, and troubleshot LAN, WAN, and CCTV systems supporting daily county ICT operations.
- Performed database operations, including inserts, updates, deletions, and integrity checks, to keep hospital records accurate.
- Supported hospital information systems and helped improve application workflows for healthcare data and reporting.

EDUCATION

Bachelor of Science in Computer Science, Egerton University, Nakuru, Kenya *2018 – 2023*

Relevant coursework: Software Engineering, System Analysis & Design, Database Management Systems, Data Structures & Algorithms, Computer Networks, Network Security, Web Development

REFERENCES

Geoffrey Mwachoki, IT Officer, Moi County Referral Hospital | geoffrey.mwachoki@taitataveta.go.ke | +254 711 318 287
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