FRANCIS MUGAMBI

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PROFESSIONAL SUMMARY

Software Engineer specializing in banking platforms, payment systems, and financial integrations, with 4+ years of software development experience, including 3+ years in banking and fintech. Experienced in Java, Spring Boot, microservices, SWIFT MT–MX conversion, ISO 20022, core banking integration, and payment orchestration. Currently lead a six-engineer team delivering a multi-tenant SACCO core banking platform, payment converters, and enterprise banking integration middleware. Strong background in transaction integrity, idempotent processing, high-availability architecture, automated testing, and production support.

TECHNICAL SKILLS

Programming: Java, Python, SQL, JavaScript, TypeScript
Frameworks: Spring Boot, Spring Security, Spring Data JPA, Hibernate, Django, Angular
Banking & Payments: SWIFT MT/MX, ISO 20022 (MT103, MT202, MT940, pacs.008, pacs.009, pacs.004, camt.053), RTGS, EAPS, STP, Finacle, mobile money integration
Databases: MySQL, MariaDB, PostgreSQL, ProxySQL, database design and optimization, data migration
DevOps & Infrastructure: Docker, Jenkins, HAProxy, Keepalived, Ansible, Prometheus, Grafana, Git, AWS, Linux/Unix
Engineering Practices: REST APIs, microservices, JSON/XML transformation, idempotency, Kafka, JUnit, Swagger/OpenAPI, Agile/Scrum, code review, technical leadership

PROFESSIONAL EXPERIENCE

Software Engineer | *E&M Technology House Ltd.* | *October 2025 – Present*

- Lead a six-engineer team delivering a multi-tenant SACCO core banking platform, a SWIFT MT–MX (ISO 20022) conversion engine, and banking integration middleware.
- Drive architecture and development across the platforms, including message mapping, validation rules, and integration with core banking systems and external payment networks.
- Designed and implemented a centralized API integration layer connecting external channels, including Interswitch, with Finacle Core Banking. Supports JSON/XML transformation, request validation, idempotency, and transaction orchestration.
- Built an EAPS conversion service connecting core banking to regional payment infrastructure, converting outbound MT103/MT202 messages to pacs.008/pacs.009 and pacs.004 where applicable, and inbound pacs.008 to MT103, with routing to central-bank participants across seven East African countries.
- Implemented payment-processing safeguards including UETR-based idempotency, staged output publication after conversion recording, file fingerprinting to detect modified downloads, and SSH host-key verification. Added 224 automated tests, including tests using an embedded SFTP server.
- Designed highly available banking infrastructure using HAProxy and Keepalived with a MariaDB replication setup fronted by ProxySQL to support load balancing and failover for critical services.
- Trained and mentored eight junior developers, bringing them up to speed to provide day-to-day production support across the platforms.

Software Developer | *E&M Technology House Ltd.* | *August 2023 – October 2025*

- Designed and implemented a production SWIFT MT–MX (ISO 20022) messaging engine for financial institutions, enabling bidirectional transformation between MT103, MT202, MT940 and pacs.008, pacs.009, camt.053, with message validation and support for straight-through processing.
- Designed and developed a multi-tenant SACCO core banking platform supporting 300+ financial institutions and 10,000+ customers, covering customer management, accounts, lending, transactions, and financial reporting.
- Built mobile money middleware connecting SACCO core banking systems to external payment platforms for deposits, withdrawals, loan disbursements, and repayments, including reconciliation for provider timeouts.
- Developed migration utilities and migrated member, account, loan, and transaction data while prioritizing data integrity, consistency, and operational continuity.
- Implemented Jenkins CI/CD pipelines for build, testing, and deployment workflows; supported production troubleshooting across application issues, integrations, database performance, and deployments.
- Developed and documented REST APIs using Swagger/OpenAPI, and collaborated with QA and engineering peers through code reviews to improve maintainability, security, and software quality.

Software Developer | *TECSOL Electrical Ltd.* | *January 2023 – July 2023*

- Developed a REST API for product listings, customer inquiries, and sales data, including authentication, role-based access control, and an internal administration dashboard.
- Built a backend data pipeline for form submissions, validation, and reporting endpoints, with attention to data integrity and secure handling.

Software Developer (Volunteer) | *Technical University of Mombasa Catholic Community* | *January 2022 – December 2022*

- Built and deployed a digital voting platform and member registration system, covering backend logic, database design, access control, automated record generation, and system optimization.

SELECTED PROJECTS

EAPS Cross-Border Payment Converter — Built a conversion gateway between core banking and the East African Payment System, with ISO 20022 message handling, multi-country routing, maker-checker corrections, field-level locking, and conversion state/revision tracking.

SWIFT MT/MX Conversion Engine — Developed bidirectional transformation for MT103, MT202, MT940 and pacs.008, pacs.009, camt.053, with message validation and standards-aware processing.

Core Banking Integration Middleware — Built a centralized integration layer between external channels, including Interswitch, and Finacle Core Banking, supporting payload transformation, request orchestration, idempotency, and controlled transaction processing.

EDUCATION & CERTIFICATIONS

Bachelor of Science, Mathematics and Computer Science — Technical University of Mombasa | December 2022
Databases for Developers: Foundations — Oracle Dev Gym | Docker from Scratch — Udemy

TECHNICAL WRITING

Publish technical writing on SWIFT, ISO 20022, ISO 8583, RTGS, cross-border settlement, and high availability. Thirteen posts over the past year reached 125,000+ impressions among banking and payments audiences. Selected technical write-ups: francis-mugambi.me.ke