

Mhina Seuta Lukurunge

Computer engineer and data scientist | Applied AI for health | Tanzania

mhinalukurunge@gmail.com · +255 656 336 356 · lukurunge.com · linkedin.com/in/mhina-lukurunge · github.com/zukazudo

CURRICULUM VITAE

PROFILE

Computer engineer and data scientist in the thesis year of an MSc in Data Science and Artificial Intelligence at NM-AIST, on the Samia Scholarship Extended (DS/AI+). Chief Technology Officer at Omnexus Pharma Solutions Hub, where I engineered Tunza Nasi, a multi-tenant pharmacy platform running in 25+ Tanzanian pharmacies. Previously district data officer on a CDC-funded HIV programme, leading 21 officers and engineering the DHIS2 and DATIM reporting behind 95%+ district viral-load coverage. Team lead of Mama Salama, first of ten teams at Pitch II of the AI4Health Local AI Buildathon 2026.

SELECTED ACHIEVEMENTS

25+	pharmacies across Tanzania running Tunza Nasi in production, each on an isolated, encrypted database
21	data officers led across a district on a CDC-funded HIV programme
95%+	district viral-load coverage, monthly, from a reporting system I engineered
1st	of ten teams at Pitch II, AI4Health Local AI Buildathon 2026, scoring 77.67 of 100
4.4	GPA, First Class, BEng Computer Engineering

EXPERIENCE

Chief Technology Officer and Director of Technology and Digital Health 2023 to present
Omnexus Pharma Solutions Hub, Tanzania

- Engineered Tunza Nasi end to end: architecture, database, backend and frontend. Multi-tenant SaaS with a separate database per pharmacy, role-based access control and encrypted off-site backups.
- Batch-aware stock with expiry and batch-level traceability, dispensing across several batches in a single sale, point of sale, procurement and analytics.
- In production since July 2023, from one bespoke deployment to 25+ pharmacies across Tanzania.
- Lead the technology and digital-health side of the firm alongside registered pharmacists, who own the clinical and regulatory rules.
- Company registered with the Business Registrations and Licensing Agency (BRELA) in July 2026.

Tutorial Assistant, Computer Engineering October 2025 to present
Mbeya University of Science and Technology, Rukwa Campus

- Conduct tutorials, seminars and practical sessions in computer engineering.
- Support research, consultancy and outreach activities, and understudy senior faculty.
- Held alongside the MSc at NM-AIST.

District Data Officer January 2024 to September 2025
Afya Hatua Programme, Tanzania Health Promotion Services (THPS), CDC-funded

- Led a team of 21 data officers across the district, covering TB/HIV, cervical-cancer prevention, gender-based violence and Option B+ (PMTCT) facilities.
- Engineered and automated weekly, monthly and quarterly reporting pipelines in DHIS2 and DATIM, improving submission accuracy and timeliness against donor and government requirements.
- Built the data quality layer: validation protocols and regular Data Quality Assessments across multiple health systems.

- Ran SQL analysis and visualisation on health performance indicators, and monitored datasets for trends, anomalies and risks.
- Built an automated S.E.A.L.S reporting template for weekly analysis and early anomaly detection.
- Engineered a custom viral-load eligibility reporting system that contributed to 95%+ district viral-load coverage monthly.
- Coordinated with regional and national authorities on the integration and availability of data collection tools across all facilities.

Data Officer

July 2023 to December 2023

Amref Health Africa, Tanzania

- HIV data and records management to facility, district, regional, government and PEPFAR guidance.
- CTC2 database entry and quality assurance from CTC cards and PITC, CBHTS, VCT and HEI registers; pre-ART and ART register transcription.
- Compiled quarterly care and treatment, mother-to-child cohort and HTS reports; quarterly DHIS2 entry; monthly missed-appointment and loss-to-follow-up reporting; daily backups.

IT Officer (Intern)

August 2021 to July 2023

The Open University of Tanzania, Kigoma Regional Centre

- Infrastructure and network management: LAN and WAN, Linux and Windows servers, email, firewalls, routers, switches and VPNs.
- Database and system maintenance (MS SQL, MySQL), user account administration through Active Directory and Group Policy, and advanced technical support.
- Built the Kigoma Regional Information System (KRIS) and an online system tracking students' academic progress and learning difficulties.
- Produced technical documentation and training materials, and designed doodle videos, flyers and infographics for the centre's marketing.

SELECTED PROJECTS

Tunza Nasi, pharmacy management platform. Multi-tenant Laravel and MySQL SaaS in production across 25+ Tanzanian pharmacies. Database-per-tenant isolation, role-based permissions, batch-aware inventory, point of sale, procurement, analytics and encrypted off-site backups.

CerviStereo, MSc thesis. AI-automated stereology for continuous, error-bounded grading of cervical neoplasia on H&E biopsies. Deep-learning nucleus and epithelium segmentation feeding design-based stereological estimators, validated against manual stereology by Bland-Altman agreement and ICC, with a coefficient of error on every estimate. Runs on 2,539 openly licensed whole-slide images from the Glasgow iCAIRD archive.

Mama Salama, offline Swahili maternal-health companion. Team lead of a six-person, two-university team: four NM-AIST data scientists and two MUHAS pharmacists, in the AI4Health Local AI Buildathon. On-device Swahili danger-sign checking for mothers and newborns in the weeks after birth, running without network or power. First at Pitch II; Grand Finale 12 November 2026.

Real-time crypto analytics pipeline, MSc capstone (DSAI 6310). Streaming pipeline over live Binance WebSocket data for five cryptocurrencies: Apache Kafka with a dual-listener setup, a Spark consumer, MongoDB storage, Kafka UI and Mongo Express monitoring, and a Streamlit and Plotly dashboard refreshing every five seconds. Sustained 18,000+ records per hour with zero consumer lag. Led the ML component: a Random Forest on 103k+ one-minute candles reaching 52.09% directional accuracy with engineered features (RSI, moving averages, volatility).

EDUCATION

MSc, Data Science and Artificial Intelligence

2026 to present

Nelson Mandela African Institution of Science and Technology (NM-AIST)

- Samia Scholarship Extended (DS/AI+), Government of Tanzania.
- Thesis: CerviStereo, AI-automated stereology for grading cervical neoplasia.

- Coursework: Mathematics for Machine Learning, Python for Data Analysis, Data Visualization, Big Data Analytics, Research Methods and Soft Skills.

BEng, Computer Engineering

2019 to 2023

Dar es Salaam Institute of Technology (DIT)

- First Class, GPA 4.4.
- Senior project: IoT remote circuit breaker for a remote facility (COU 08204).
- Coursework: System Analysis and Design, ICT Project Management, Management Information Systems, Data Mining and Analytics, Database Programming and Administration, Computer Networking.

Advanced Level, PCM combination

2017 to 2019

Kibiti Secondary School

Ordinary Level, Science and Business

2013 to 2016

Kibaha Secondary School

TECHNICAL SKILLS

Languages and frameworks	PHP and Laravel, Python, SQL, JavaScript, Java and Android
Data and machine learning	pandas, NumPy, scikit-learn, matplotlib and seaborn, PyTorch, feature engineering, model validation
Data engineering	Apache Kafka, Apache Spark, MongoDB, MySQL, PostgreSQL, Streamlit, Plotly
Health information systems	DHIS2, DATIM, CTC2, data quality assessment, national and donor reporting
Imaging and research tools	QuPath, OME-TIFF and whole-slide image handling, stain normalisation, design-based stereology
Design	Figma, Adobe Photoshop, Illustrator, After Effects, Premiere Pro

TRAINING, RECOGNITION AND OUTPUTS

- First place, Pitch II, AI4Health Local AI Buildathon 2026 (77.67 of 100); through to the Grand Finale, 12 November 2026.
- AgriFin Hackathon 2026, on agricultural finance for smallholder farmers, convened and judged by NMB Bank and NM-AIST.
- Data Science Africa 2026 summer school and workshop, Makerere University, Kampala.
- Principles for Digital Development, AI4Health cohort training, MUHAS.
- Literature review of deep learning and stereology in cervical histopathology, 2022 to 2026, underpinning the MSc thesis.
- Digital Learning Africa Summit, International Business and Economic Forum (IBEFoRM).
- Member, Young Scientists in Tanzania.

LANGUAGES

Swahili (native). English (fluent).

REFEREES

Available on request.