



[EdTech & DevOps](#)

# ARNOLD MUENDO MUTUA

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## PROFESSIONAL PROFILE

### Systems Architect & EdTech Specialist

Forward-thinking ICT professional with over 6 years of experience architecting secure, accessible digital ecosystems. Currently leading **Digital Transformation at MTIB**, where I engineered a hybrid-cloud infrastructure hosting a custom **Modular ERP, Moodle 4.5 LMS, Website** and a proprietary **RAG AI Student Assistant (AURA)** to enhance digital accessibility. Proven expertise in full-stack development (Next.js, CSS, PHP), DevOps automation (Docker, GitHub Actions), managing hybrid environments (On-Premise + DigitalOcean VPS). and database management. Passionate about leveraging technology to bridge the digital divide for marginalized. A board of Governors Member and currently pursuing a Postgraduate Diploma in Learning Design Technology to align technical prowess with pedagogical strategy.

## CORE COMPETENCIES & TECHNICAL SKILLS

Domain	Competencies
<b>LMS &amp; EdTech</b>	Moodle (4.x), customization & Administration, authoring Tools (Articulate Storyline 360, Camtasia, Canva + SCORM/xAPI Content Design), WCAG 2.1 Accessibility Compliance, Screen Reader Optimization (NVDA/JAWS), User Training & Support.
<b>Full Stack Dev</b>	<b>Frontend:</b> React, Next.js 14, Tailwind CSS, TypeScript. <b>Backend:</b> Node.js, PHP 8.2 (Vanilla & Laravel), Strapi Headless CMS, Python (FastAPI)
<b>DevOps &amp; Cloud</b>	<b>Infrastructure:</b> Docker Swarm, Ubuntu Server 24.04, NGINX, DigitalOcean Droplets, Azure (IaaS, PaaS, SaaS) <b>CI/CD:</b> GitHub Actions (Self-Hosted Runners), Automated Deployment Pipelines. <b>Security:</b> Cloudflare Zero Trust (Tunnels), SSL Management(tailscale), 3-2-1 Backup Strategy. <b>Monitoring/Observability:</b> Real-time monitoring via <b>Uptime-Kuma</b> , Container Orchestration via <b>Portainer</b>
<b>Web Operations</b>	CPanel/WHM Administration, DNS Management, Enterprise Email Server Configuration, Web Hosting Management.
<b>Database &amp; AI</b>	<b>Database:</b> MariaDB/MySQL, PostgreSQL, HeidiSQL, SQL Optimization <b>AI:</b> RAG (Retrieval-Augmented Generation + VectorDb) Implementation, Ollama/Llama deployment.

## PROFESSIONAL EXPERIENCE

### Networks & Systems Administrator

**Machakos Technical Institute for the Blind | Sep 2025 – Present**

**Hybrid Cloud Architecture:** Architected a robust hybrid environment, managing on-premise Docker clusters and orchestrating the strategic deployment of the Website, Strapi CMS and LMS to DigitalOcean Droplets (VPS) to ensure high availability and scalability.

**Software Development:** Initiated and leading the full-stack development of modern fully accessible Website and "VisionLink ERP", a modular ERP (PHP/MariaDB) to automate Admissions, Finance, and Academics, replacing disjointed legacy systems.

**ODEL:** Pioneering establishment of MTIB as ODEL Centre - Studio Setup, supporting ICT trainers in authoring software use & content creation according to TVET curriculum guidelines, deployed and administrate Moodle 4.5 LMS, specifically hardening it for accessibility (WCAG 2.1) to support screen readers for visually impaired learners and exploring the incorporation of gamification in learning for the visually impaired.

**AI Innovation:** Engineering "AURA", a private, on-premise RAG AI agent using Llama 3, Python/FastAPI and VectorDb for retrieval optimization, enabling students to query institutional policies via natural language.

**Observability & Systems Management:** Deployed **Portainer** for visual container orchestration and **Uptime Kuma** for real-time service monitoring, reducing incident response time by **80%** and ensuring 99.9% uptime for the LMS and ERP.

**Web Operations & Support:** Manage end-to-end web hosting operations including CPanel administration, DNS configuration, SSL enforcement, and enterprise mail servers.

**Security & Governance:** Authored the institutional Data Protection Policy and secured the network edge using Cloudflare Zero Trust Tunnels. I manage all data privacy, backup (3-2-1 model) and surveillance systems.

**Capacity Building:** Spearhead digital capability building, conducting comprehensive user training workshops for staff and students on ERP usage, LMS navigation, and cybersecurity best practices.

**Leadership & Support:** Head of ICT Department, Lead and mentor a team of 3 ICT technicians and attachés. Provide all levels of user support and training to staff and students on lab practical, ERP usage and other institutional systems.

### LMS Administrator & Digital Skills Trainer (Part-Time Role)

**AIRDT – Skills4Life College & Tusomeei Computer Nduani (TCN) | Jan 2025 – Present**

**LMS Management:** Co-developed a Moodle-based learning platform, managing course provisioning, user enrollment and plugin integration for digital skills training.

**Instructional Design:** Collaborated with faculty to design SCORM-compliant digital content and interactive assessments, ensuring alignment with TVET curriculum standards.

**Learner Support & Collaboration:** Provide technical support to trainers and learners, resolving navigation issues and implementing learning analytics to track engagement. Collaborate with stakeholders to align course offerings with local workforce needs and digital transformation trends.

### Assistant Systems Administrator (Innovation & Systems)

County Government of Makueni – County Treasury | Nov 2023 – Sept 2025

**Full-Stack Development:** Spearheaded the design and development of "RevCore", a web-based revenue collections reporting and analytics tool using PHP, MySQL, and Chart.js. **Impact:** The system automated revenue collections reporting & reconciliations, reports generation, increasing data accuracy by 90% and eliminating hours of manual reconciliation tasks.

**System Administration:** Administered critical enterprise systems (IFMIS, LIMS and ZIZI), managing backups, Active Directory policies, and server health for the County Treasury.

**Mentorship and Client Support:** Led a team of interns and attachés, instilling best practices in coding standards and IT support workflows. Managed online communication channels and supported digital engagement initiatives to enhance customer relations. Served as the primary point of contact for customer inquiries, complaints and feedback.

### ICT Officer Supporting Revenue

County Government of Makueni – County Treasury | Feb 2021 – Nov 2023

**Digital Transformation:** Championed the migration to cashless revenue payments, digitized and automated invoicing and payments, a key factor that contributed to the county achieving KES 1 Billion in annual revenue in FY 2024/25.

**Hardware Operations:** Managed the configuration and maintenance of over 100 POS machines and field network devices, reducing downtime by 40%.

**Contributed to revenue mobilization efforts**, achieving an average of 98% of collection targets for three consecutive years, partly through the optimization of IT-supported revenue processes.

### Previous Experience:

**ICT Intern (Developer):** Makueni Public Service Board (Feb 2020 – Feb 2021) – Revamped official website and scaffolded online recruitment portal.

**Constituency ICT Clerk/Supervisor:** IEBC & KNBS (2019, 2022) – Managed electoral tech (KIEMS) and census data tablets.

**Computer Technician & Teacher:** Maumba Secondary School (May 2018 – Feb 2020) – Designed the interior of their first computer lab creating an optimized ICT learning environment and led their first Form 4 Computer Studies class to achieve an outstanding mean grade of 8.33 in their final KNEC project examination in 2019.

## EDUCATIONAL QUALIFICATIONS

### 🎓 Postgraduate Diploma in Learning Design and Technology

The Open University of Kenya (OUK) | In Progress

- **Capstone:** *The Role of Gamification in Enhancing Student Motivation in Online Learning: A Case Study of "Tusomeei Computer Nduani" Initiative.*

### 🎓 Bachelor of Science in Computer Science (2nd Class Upper Division)

University of Eldoret | Aug 2014 – Apr 2018

- **Capstone:** *Automated School Timetabling System (Java/Algorithms/PhpMyAdmin) – Web application*

📄 **Certificate in Computer Networking (Distinction)** - Wote Technical Training Institute | Jan – Apr 2019

📄 **K.C.S.E Certificate (Mean Grade: A- | 71 points)**- Kitonguni Secondary School | Feb 2010 – Nov 2013

📄 **K.C.P.E Certificate (Mean Grade: A- | 382 Marks)** - KwaKavita Primary School | Jan 2001 – Nov 2009

## LEADERSHIP & COMMUNITY SERVICE | Nov 2025 - Present

**Board of Management (BOM) Member** - Kitonguni High School & Kwakavita Primary School

**Strategic Advisory:** Advising the board on ICT integration strategies to modernize school administration and learning.

**Digital Literacy:** Founder Tusomeei Computer Nduani (TCN) - Championing initiatives to introduce computer literacy programs for students, staff & marginalized Population.

## CERTIFICATIONS AND PROFESSIONAL DEVELOPMENT

**Cloud:** Microsoft Certified: Azure Fundamentals (AZ-900).

**Management:** Customer Relations Management (Wote TTI).

**Digital Skills:** Ajira Digital Online Work Certification.

**In View:** Docker Certified Associate (DCA) & Moodle Certified Qualification (MCQ)

## AWARDS

🏆 **Certificate of Exemplary Performance**, awarded by ECM - Finance & Socio-Economic Planning - Makueni County (2024) for being key member of the team that drove Makueni County revenue to KES 1 billion through strategic RRI initiatives and IT system optimization.

🏆 **Best Revenue Collection & Reporting Team** – Kibwezi West Subcounty, Makueni County (FY 2022/2023).

## REFEREES:

Feel free to request more and contact referees in regard to my competence and work ethic.

1. MR. PATRICK NZULA  
D/DIRECTOR REVENUE- MAKUENI COUNTY TREASURY  
Tel. 0721938030  
Email. [patrick.nzula@makueni.go.ke](mailto:patrick.nzula@makueni.go.ke)  
Duration known: Over 5 years
2. MR. SAMMUEL CHAMBO  
SENIOR ICT OFFICER - MAKUENI COUNTY PUBLIC SERVICE BOARD  
Tel. 0716061877  
Email. [schambo@makuenipsb.go.ke](mailto:schambo@makuenipsb.go.ke)  
Duration known: Over 6 years