

LILIAN MARCO BITESIGIRWE

Information Systems Design and Analyst

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PROFESSIONAL SUMMARY

As a Computer Science graduate and Information Systems Analyst, I am passionate about leveraging technology to address challenges and create practical solutions. My journey in ICT has been marked by a commitment to excellence and a fervent desire to contribute to positive change and innovation. Currently pursuing my Masters in Computer and Information Engineering at Daegu University, South Korea, where I work as a Research Scholar at FICLab focusing on Machine Learning, Deep Learning, and Human-Computer Interaction (HCI). I believe technology should serve as a tool for social good and gender inclusion in STEM.

EDUCATION

Master of Computer and Information Engineering

Sep 2025 – Present

Daegu University · Daegu, South Korea

Research Scholar at FICLab · Focus: Machine Learning, Deep Learning, Human-Computer Interaction

Bachelor of Science in Computer Science

Oct 2020 – Oct 2023

University of Dar-es-Salaam (UDSM) · Dar-es-Salaam, Tanzania

Specialization: Information Systems, Software Development, Systems Analysis

Advanced Level Certificate (PCM)

Jul 2018 – May 2020

Msalato Girls High School · Tanzania

WORK EXPERIENCE

Research Scholar

Sep 2025 – Present

FICLab, Daegu University · Daegu, South Korea

- Conducting research on intelligent computing technologies including ML, deep learning, and HCI at Daegu University's FICLab under Prof. Oh Yoosoo.
- Published paper: "Data Quality Assessment with Automated Machine Learning for Enhanced Outbreak Prediction and Public Health Analytics" Journal of Korea Society of Industrial Information Systems, Feb 2026.
- Developing a real-time behavioral detection system for individuals with Intellectual and Developmental Disabilities (IDD) using computer vision and deep learning (ConvLSTM, SAMURAI tracking, SAM2).
- Co-authoring: "Intelligent Manufacturing Analytics Dashboard Using Machine Learning for Real-Time Quality Prediction and Root Cause Analysis" ISIITA Conference 2026.

Information Systems Analyst (Lead Component Analyst)

Aug 2023 – Aug 2024

UDSM DHIS2 Lab · Dar-es-Salaam, Tanzania

- Led development of the Composite Management Information System (CMIS) for Tanzania's Ministry of Health in partnership with NMCP and Swiss TPH, digitizing malaria data management with real-time reporting.
- Spearheaded the Larvae Source Management (LSM) mobile tool within CMIS, enabling efficient electronic data collection for malaria vector control via DHIS2 mobile and web apps.
- Managed and analyzed systems for malaria intervention programs: LSM, SMPS (School Malaria Parasitological Surveillance), Malaria Micro-Stratification, and MEEDs (Malaria Early Epidemic Detection System).

Intern — Innovator & Facilitator

Nov 2021 – Aug 2023

Youth For Children Innovation Hub (UNICEF Partnership) · Dar-es-Salaam, Tanzania

- Managed UNICEF-aligned projects addressing social challenges through digital solutions using Human Centered Design (HCD) and challenge-driven approaches.
- Contributed to youth innovation programs promoting tech-driven problem-solving and gender inclusion in STEM.

Facilitator

Dec 2022 – Apr 2023

SmartGirls in ICT (ITU) · Dar-es-Salaam, Tanzania

- Trained secondary school girls in HCD methodologies to solve real-world challenges as part of an International Telecommunication Union (ITU) initiative.

ICT Trainer

Feb 2022 – Mar 2022

Help to Help · Dar-es-Salaam, Tanzania

- Equipped female university students with practical ICT skills including Microsoft Office Suite and professional digital communication tools.

Intern Trainee — ICT Officer

Jul 2021 – Sep 2021

TANESCO (Tanzania Electric Supply Company) · Dar-es-Salaam, Tanzania

- Participated in electrical grid troubleshooting and network device configuration and maintenance.

PUBLICATIONS & RESEARCH

- Bitesigirwe, L. M., & Oh, Y. (2026). *Data Quality Assessment with Automated Machine Learning for Enhanced Outbreak Prediction and Public Health Analytics*. Journal of Korea Society of Industrial Information Systems, Vol 31(1), 17-28.
- *Intelligent Manufacturing Analytics Dashboard Using Machine Learning for Real-Time Quality Prediction and Root Cause Analysis*. ISIITA Conference 2026 (In Progress).

SKILLS

Research & AI	Machine Learning · Deep Learning · Computer Vision · HCI · Academic Writing · Data-Driven Algorithms
Information Systems	Systems Analysis & Design · Requirements Gathering · DHIS2 · Data Quality Assessment · Health Information Systems
Programming	Python (ML/DL, Dash/Plotly) · JavaScript · ReactJS · SQL
Design & UX	Human-Centered Design · UI/UX Design · Prototyping · Usability Testing · Figma
Tools & Platforms	DHIS2 · AutoML · Git · Microsoft Office · LibreOffice
Soft Skills	Leadership · Cross-cultural Collaboration · Project Management · Communication · Critical Thinking

CERTIFICATIONS & AWARDS

- DHIS2 Academy Certificates: Introduction to DHIS2, Aggregate Data Capture & Analysis, Aggregate Customization, Events Fundamentals
- 2nd Place - TCRA National Design Thinking Competition (Tanzania Communications Regulatory Authority, Girls' Track)
- Connected African Girls Coding Camp - UNECA (Web Development, AI, Robotics, 3D Printing, Animation)
- Udemy Certificates: Python Dashboard (Plotly & Dash), Python Data Science & ML, Python Bootcamp

LANGUAGES

Swahili (Native) **English** (Fluent - Professional & Academic) **Korean** (Intermediate - TOPIK Level 4)

VOLUNTEERING

Dar Slush'd - Event Organizer & Volunteer

Helped organize a platform for Tanzanian youth to engage with the local and global startup ecosystem, with a focus on gender inclusion in technology and entrepreneurship.

REFERENCES

Available upon request. Portfolio: iamlilianmarco.netlify.app

Dr. Hellen Maziku — Lecturer, CoICT-UDSM · nahelna@gmail.com · +255-717-743-350

Dr. Honest Kimaro — Lecturer & DHIS2 Lab Coordinator, CoICT-UDSM · honestck@gmail.com · +255-758-392-001

Prof. Oh Yoosoo — Professor, Daegu University · yoosoo.oh@daegu.ac.kr