

MARK IRERI GACIRI

Gender: male |

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● ABOUT ME

I am a Bachelor of Science in Telecommunications and Information Engineering undergraduate set to complete by June 2025. I have a strong foundation in Telecommunication systems, Network Administration, Electrical Systems and Programming Languages such as Python. My academic journey has included hands on experience in Cryptography and Data Management highlighted by projects like IBM's Capstone on Fundamentals in Cybersecurity. I have a proven ability to solve problems, adapt quickly to new technologies and thrive in dynamic environments. I am passionate about applying my knowledge to real world challenges and I am eager to contribute my skills to your team while continuously learning from industry experts and grow as a professional in the industry.

● EDUCATION AND TRAINING

19/07/2020 – CURRENT Nyeri, Kenya

BACHELOR'S DEGREE IN TELECOMMUNICATIONS AND INFORMATION ENGINEERING Dedan Kimathi University

Technical Skills:

- Network Design and Optimization
- IoT and Embedded systems e.g. Sensors
- Antenna design and Radio Frequency Engineering
- Cybersecurity
- Fiber Optic Installation and Maintenance
- Electrical Machines Circuits and Operations

Software Proficiency:

- MATLAB
- MySQL
- Advanced Design System

Programming Languages:

- C++
- Python
- Verilog/VHDL (for FPGA programming)

Instrumentation and Testing:

- Oscilloscopes
- Spectrum Analyzer
- Multimeters
- Signal Generators

Website <https://www.dkut.ac.ke/> | **Field of study** Engineering and Information Technology

10/01/2016 – 13/12/2019 Thika

KCSE CERTIFICATE Mang'u High School

Website <https://manguhigh.com/>

LANGUAGE SKILLS

Kiswahili

English

DIGITAL SKILLS

Python programming | Cybersecurity | MATLAB | Database Management | Machine Learning |

EXPERIENCE

Agapetech Enterprise

- Roles:
- Fiber optic installation and maintenance
 - Network configuration
- Duration: Three months

Semiconductor Technologies Limited

- Roles:
- Sample preparations
 - Sample processing and analysis(using Excel for data manipulation, graphing and storage)
 - Machine troubleshooting
 - Process optimization(using optimal performance data from analysis)
- Duration: Four months

DeKUT (Class Attendance Management System)

- Roles:
- Developing CRUD operations for student enrollment, teacher assignments, and attendance tracking.
 - Utilizing SQL JOINS and indexing to optimize data retrieval and improve query performance.
 - Ensuring data integrity through constraints like PRIMARY KEY, FOREIGN KEY, and UNIQUE indexes.
 - Implementing role-based access control (RBAC) for secure data handling (students, teachers, and admins).
 - Applying input validation and SQL injection prevention for database security.
 - Setting up automated backups and recovery strategies to prevent data loss.
 - Optimizing database performance using query optimization techniques and EXPLAIN ANALYZE.
 - Managing database transactions with COMMIT and ROLLBACK for data consistency.

- Key Achievement:
- Designing and implementing a relational database using MySQL for managing students, teachers, classes and attendance for a school project.

Duration: Four months

DeKUT (Plant Disease Detection using Machine Learning)

- Roles:
- Data collection through image capture

- Pre-processing of Tomato Leaf Images data for model training and validation e.g. using NumPy for converting images into NumPy arrays for model input and normalization
- Optimizing model performance for accuracy and efficiency in real-time detection
- Building an interactive web-based interface using Streamlit for users to upload images and receive disease predictions
- Integrating the trained machine learning model into the web app for seamless deployment using TensorFlow/Keras

Key Achievements:

- Successfully trained a machine learning model with a 91% accuracy in detecting multiple tomato leaf diseases using CNN architecture and Python.
- Worked effectively with a team of three members and Dr Joseph Muguro, ensuring a well-coordinated development process.
- Developed a fully functional Streamlit-based web application for real-time disease detection (<https://tomato-disease-detector.streamlit.app/>).

Duration: Eight months

● **ADDITIONAL INFORMATION HOBBIES AND INTERESTS**

Data Science

Art

Swimming

CERTIFICATIONS

Cybersecurity Fundamentals with IBM

Ethical Hacking with DeKUT Cisco Networking Academy

CONFERENCES AND SEMINARS

11/10/2023 – 12/10/2023 – Nairobi, Kenya

- **Safaricom Engineering Summit Decode 2.0** The Safaricom Engineering Summit, Decode 2.0, is an immersive annual event designed to elevate technological innovation and collaboration. Gathering leading engineers, tech enthusiasts, and industry visionaries, it serves as a platform for insightful discussions, hands-on workshops, and cutting-edge demonstrations. Decode 2.0 showcases emerging trends in software development, artificial intelligence, cloud computing, and more. Through keynote presentations and interactive sessions, participants delve into groundbreaking solutions and explore the future of technology. This summit fuels creativity, fosters networking, and inspires a community of forward thinkers dedicated to driving digital transformation and revolutionizing the tech landscape in Kenya and beyond.

REFEREES

Agapetech Enterprise

Agapetech Enterprise is where I undertook my first attachment. I learned and applied a lot on Fiber optics and network configurations.

Mr. Dave

Position Human Resource Manager

Email agapetechenterprise@gmail.com | **Phone** (+254) 790382414

Dr Joseph Muguro

Position Project coordinator (Plant Disease Detection using Machine Learning) and lecturer at Dedan Kimathi University

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