ERIC MUINDE MULWA

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PROFESSIONAL EXPERIENCE

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY   **NYERI, KENYA**

Final Year Project, Department of Electrical and Electronic Engineering.

SMART ELECTRIC VEHICLE WIRELESS CHARGING SYSTEM (SevWCS)   **05/2023 – Present**

The project was a three-person group work as per the BSc EEE department requirements.

- Designed the Smart EV Wireless Charging System Transmitter and Receiver subsystems.
- Evaluated the performance of different coil-separation distances (0.01m, 0.1m, 1m & 10m).
- Simulated the Smart EV Wireless Charging System on Proteus 8 Professional.
- Implemented and tested the functionality of the Smart EV Wireless Charging System prototype.

Technologies used: Wireless Power Transfer, Radio Frequency Identification protocol (RFID), Interrupt Service Routine, UART communication protocol, GSM SIM7600CE 4G Communication protocol, GPIO Protocol, Inter-integrated circuit protocol (I2C), Serial Peripheral Interface (SPI), PCB Design, 3D Design and 3D Printing. Project Report

CENTER FOR DEVELOPMENT OF ELECTRONIC DEVICES (CDED)   **NYERI KENYA**

CDED is an electronic center at Dedan Kimathi University of Technology which specializes in designing and building innovative electronic devices. The center has completed several embedded systems projects including the DeKUT Speed Governor, Water Dispenser Circuit Board, Ventilator Circuit Board and Student learning Device.

Embedded Systems Attaché   **02/2023 – 05/2023**

Tasked with developing an Electronic Prepaid Water Meter.

- Performed breadboard prototyping using off-shelf components to test and determine viability.
- Developed an alpha prototype for testing the product exhaustively.
- Designed the electronic circuit for the prepaid meter using cost effective and readily available parts.
- Designed a Printer Circuit Board and enclosure for the prepaid water meter.

Technologies used: Water metering, Hall effect, Interrupt Service Routine, UART communication protocol, GSM SIM7600CE 4G Communication protocol, GPIO Protocol, Inter-integrated circuit protocol (I2C), Serial Peripheral Interface (SPI), PCB Design, 3D Design and 3D Printing. Attachment Report & Project Report.

RELCON POWER SYSTEMS LIMITED   **NAIROBI, KENYA**

Relcon Power Systems Limited specializes in commercial full-scale electrical installations.

Commercial Attaché   **02/2022 – 05/2022**

Worked on a Full-scale Electrical Installation Project in 316 Upperhill Chambers, 7th Floor. Tasks completed include:

- Piping installation for power and lighting circuits.
- Lighting and three-phase power supply circuits installation.
- Surface-trunking system and Cable tray installation.
- Lighting circuit control & Air conditioning unit installation.
- Fire alarm installation and control.
- Cable Termination in a three-phase distribution board. Attachment Report.

EDUCATION

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY   **NYERI, KENYA**

Course: *Bachelor of Science in Electrical and Electronic Engineering (BSc EEE)*   05/2019 – 12/2023
Grade: Second Class Honors (B) with Fifth year pending.
Activities and Societies: Member IEEE DeKUT Chapter, Technocrats, Innovators Club and EVs Center.

ST. JOSEPH'S SECONDARY SCHOOL, KATHEKA   **MACHAKOS, KENYA**

Kenya Certificate of Secondary Education (KCSE)   02/2015 – 12/2018
Grade: B+, AGP = 72 points.

- Awarded as the **Best Day Scholar Student** Machakos County KCSE, 2018.

LEADERSHIP ACTIVITIES

Student Organization, *LAB PREFECT* 01/2016 – 10/2018

Served as the chemistry and physics lab prefect for two consecutive terms and managed to keep all chemicals, reagents and electronics in the labs well organized and secure.

Young Cristians Society (YCS), *CHAIRMAN* 01/2017 – 10/2018

Served as the chairman for the YCS movement and managed to get more students to participate in Christian activities such as charity activities and visiting the sick.

ADDITIONAL INFORMATION

Technical Skills: Embedded systems Programming, Internet of Things, Artificial Intelligence and Machine Learning, Printed Circuit Boards Design, 3D Design and 3D Printing, Modelling and Project Simulations, Testing, repairing and maintaining electrical systems, Adequate Understanding of Standard Electrical Control Systems and Project Management.

Programming Languages: C, C++, Python, Micro Python, HTML, JavaScript and Basic Kotlin.

Tools: AutoCAD MEP, Tinker CAD, SolidWorks, MATLAB & Simulink, NI LabView, NI Multisim, OrCAD, AWS, Proteus 8 Professional, Arduino IDE, STM32CubeIDE, STM32 Programmer, Keil-Uvision, KiCAD, Altium Designer, Cadence Allegro, Ultimaker Cura, Creality Slicer, Audacity, Python IDLE, Visual Studio Code, RStudio and Jupyter Notebooks.

Interests: Teamwork, Software design and modelling, Scientific Research and Writing.

Volunteer: Charity Activities.

REFEREES

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