AUGUSTINE MUTINDA MWENDWA

ELECTRICAL ENGINEER

Phone: +254704863390, +49 69 299 149 650
E-Mail: augustine.mwendwa@candidate.talents2germany.de
LinkedIn: www.linkedin.com/in/augustine-mwendwa-b00420145/
GitHub: https://github.com/augustinemwendwa72
Address: Nairobi, Kenya.

PROFESSIONAL SUMMARY

With 6+ years of experience in embedded systems design, FPGA development, and hardware programming, I specialize in creating advanced solutions for power systems and hardware challenges. Proficient in VHDL, Python, C/C++, and tools like MATLAB, Vivado, and Cadence, I excel in hardware-software integration and innovative product development. Key achievements include designing environmental sensors deployed across Africa and optimizing FPGA-based systems for high- speed processing. I bring strong problem-solving skills and a results-driven approach to technological innovation.

EXPERIENCE

SEN, Germany

FPGA Developer **01/2024 - Present**

- Designed and implemented FPGA-based solutions for high-speed data acquisition, signal processing, and communication protocols (SPI, UART).
- Developed and optimized RTL modules in VHDL to ensure efficient and reliable performance.
- Conducted timing analysis and constraint management to meet setup and hold timing requirements across diverse frequency ranges.
- Integrated custom IP cores with AXI interconnects for system-on-chip (SoC) applications on Zynq platforms.
- Collaborated with cross-functional teams for hardware-software co-design and seamless system integration.
- Performed functional verification using test benches and simulation tools like ModelSim.
- Maintained version control and contributed to project documentation using Git.

Sensors Africa Under Code for Africa (CFA)

Hardware Engineer **03/2023 - 01/2024**

- Developed, designed, assembled, and programmed cost-effective environmental monitoring sensors, including air and noise pollution sensors.
- Led PCB design using Eagle CAD, enclosure design with Fusion, sensor behavior modeling in MATLAB Simulink, and sensor board assembly, including SMD component soldering, testing, and deployment.
- Achieved significant advancements in sensor power efficiency, implemented LiPo charging systems and algorithms, and created plug-and-play sensor designs.
- Successfully expanded sensor deployments to Ghana, Nigeria, Tanzania, and South Africa by delivering efficient, easy- to-install, and maintainable solutions.

Wrote Technical Training Institute

Electrical & Electronics Trainer **08/2021 - 01/2022**

- Conducted training sessions on hardware programming, PLC programming, analog electronics, and digital electronics, ensuring students gained hands-on technical skills.
- Taught foundational electrical principles, electrical installation, and electrical power design and distribution, preparing them for practical applications in the field.
- Provided mentorship and technical support to students during laboratory exercises and project implementation.

St. Francis Meru, Kenya

Electrical and Electronics System Maintenance Engineer **07/2020 - 06/2022**

- Conducted new electrical installations and maintained existing systems, ensuring compliance with safety and operational standards.
- Installed and repaired AC motors, delivering reliable performance and minimizing downtime.
- Managed the installation of a 10KW solar power system and three borehole solar power systems to support sustainable energy solutions.
- Led a team to execute electrical installations, ensuring compliance with established electrical installation standards.

Flex Communications Ltd

Hardware Engineer **10/2019 - 03/2021**

- Served as an Electronics Engineer, focusing on PCB design, etching, assembly, testing, and hardware programming for IoT devices, speed governors, and car trackers.
- Gained expertise in operating advanced fabrication equipment, including PCB milling machines, Mancorp stencil printers, auto-placement machines, and laser cutters/printers.
- Developed hardware programming skills using C, Python, and related languages.
- Programmed and integrated FPGA, STM32, PIC, Raspberry Pi, and Arduino microcontrollers for various applications.

THE DCI - KENYA

Electronics Engineer - Contract **05/2021**

- Contracted as an Electronics Engineer to install and configure advanced equipment, including PCB milling machines, CNC machines, and stencil printers, ensuring optimal functionality and precision.
- Conducted system testing and calibration to guarantee compliance with technical specifications and operational requirements.

FREELANCE

Electrical Engineer **03/2019 - 04/2022**

- Designed and implemented various IoT projects, including biometric systems and the integration of AI technologies into existing systems, enhancing functionality and efficiency.
- Conducted domestic electrical installations for clients, ensuring compliance with safety standards and delivering high- quality results.
- Utilized software tools such as AMD Vitis, AutoCAD, MATLAB, CADENCE, and various programming IDEs to develop, test, and optimize technical solutions.
- Applied expertise in hardware programming and electrical design to deliver customized and innovative solutions for diverse projects.

EDUCATION AND TRAINING

MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY, KENYA

Bachelor of technology in electrical and electronics engineering 2014 - 2019

SKILLS

- FPGA Programming in VHDL
- MathWorks MATLAB, AutoCAD, National Instruments LabVIEW, Adobe products, and Microsoft products.
- Cadence (PCB design and circuit analysis).
- Electrical system network design, and evaluation.
- Full Stack programmer (Python, Assembly, C, C++ and PLC)
- Motor control and rewinding.
- Expansive knowledge of engineering technology, computers, design techniques, and physical principles of engineering.
- Power generation, distribution, and installations.

SOFT SKILLS

- Time management
- Problem solving and Critical Thinking
- Excellent Communication
- Team leadership skills
- Organizational skills
- Detail-oriented
- International work experience.

LANGUAGES

- English (C1)
- German (B1)

PROJECTS

- Designed and managed to produce consumable electronics such as MPESA vending machines, Remote control systems for heavy machines, smart home devices, smart farming systems, and many more that are on their way to production.
- Currently developing advanced wind power intelligent monitoring system to enhance power generation efficiency.