ABIODUN O. TAIWO

PROFILE

Dynamic and impact-driven Maintenance Supervisor and Electrical Engineer with multidisciplinary experience spanning high-speed manufacturing, smart systems research, academic instruction, and STEM public outreach. Proven ability to lead cross-functional teams, streamline preventive maintenance operations using IBM Maximo, and drive data-informed decisions that boost equipment uptime and regulatory compliance. Recognized for translating complex engineering concepts into actionable solutions and fostering innovation in high-stakes environments, including FDA-regulated facilities and autonomous systems development. Adept at engaging diverse audiences—from factory floor teams to community stakeholders—with a passion for knowledge-sharing and systems optimization.

EDUCATION

North Carolina Agricultural and Technical State University Greensboro, North Carolina, USA **Master of Science—Electrical and Computer Engineering GPA – 3.74/4.0 Graduation: Dec. 2024**

Federal University of Technology, Oye-Ekiti Oye, Ekiti state, Nigeria
Bachelor of Engineering—Mechatronics Engineering GPA – 4.26/5.0 Graduation: Jul. 2022

The Polytechnic Ibadan Sango, Oyo state, Nigeria
Bachelor of Science—Electrical and Electronics Engineering GPA – 3.29/4.0 Graduation: Nov. 2017

SKILLS

Soft skills: Strong analytical thinking, troubleshooting, fault finding, problem solving and analysis skills and attention to details.
Technical skills: Technical Skills:

Industrial Automation

- Configuration, programming, and troubleshooting of SIMATIC controllers (S7-1200, S7-1500, S7-300, S7-400)
- Siemens Variable Frequency Drives configuration and programming using Siemens Starter drives commissioning tool
- Preventive Maintenance with CMMS (IBM Maximo)
- Electrical installations: cabling, distribution boards, panel wiring, and motor control

Programming and Software

- Scada Portal, MATLAB, C++, Python.
- Embedded systems and microcontroller programming
- PLC programming with Siemens SIMATIC S7 series
- SAP PM, IBM MAXIMO for maintenance management and spare parts management

Instrumentation and Calibration

- Field instruments calibration using MC5 and Beamex, Camera/Lidar Module
- Familiarity with sensor systems (Camera/LiDAR)
- Preventive diagnostics on bottling and packaging line sensors
- Hands-on experience with HMI/PLC-sensor interfacing

Additional Technical Proficiency

- Electrical system design, load analysis, and system integration for inverter systems, voltage regulators, and stabilizers
- Electrical installations including cable, switches, distribution boards, sockets, and light fittings

Project Management

- Reviewing project instructions, manuals, and blueprints to ensure compliance with specifications and safety regulations • Resource planning and detailed project scheduling
- On-call support for troubleshooting, repairs, and emergencies.

RELEVANT COURSES TAKEN

- Advanced Digital Systems
- Very Large-Scale Integration Circuit Design
- Semiconductor Theory Devices
- Embedded Computing Systems Design
- Digital Signal Processing
- Electronic Design Automation
- Power Systems Analysis
- Digital Communications
- Testing Methods and Reliability
- Mechanics of Machines
- Theory of Linear Control Systems
- Probability and Random Process
- Mechatronics System Designs
- Maintenance Technologies
- Engineering Drawing and Blueprint Reading

WORK EXPERIENCE

Abbott Nutrition **Casa Grande, Arizona, USA**

Maintenance Supervisor. **Feb. 2025 – Present**

- Spearhead the strategic oversight of electrical and electromechanical systems within a high-precision medical device production facility, ensuring 24/7 operational readiness and regulatory compliance.
- Lead cross-functional coordination between engineering, quality assurance, R&D, field operations, and external vendors to support validation, commissioning, and lifecycle optimization of complex manufacturing equipment.
- Develop and enforce preventive, predictive, and condition-based maintenance strategies using **IBM Maximo**, resulting in over **95% equipment uptime** and substantial reduction in unplanned downtime.
- Perform in-depth diagnostics and root cause analysis (RCA) on high-value assets and automated systems, integrating findings into long-term reliability engineering practices.
- Review and approve maintenance procedures, technical drawings, and electrical specifications in alignment with **FDA**, **cGMP**, **ISO 13485**, and **internal QA protocols**.
- Design and implement equipment reliability KPIs, tracking performance and failure trends to proactively schedule interventions and optimize lifecycle cost.
- Leverage virtual sensor systems and historical performance data to model degradation patterns and trigger early fault detection, extending asset longevity.
- Review power supply test reports and conduct condition-based maintenance, life extension evaluations to determine asset longevity.
- Create and manage **critical spare parts inventory plans**, ensuring rapid response during system faults and maintaining business continuity.
- Direct and supervise multi-skilled maintenance technicians, providing technical mentorship, shift scheduling, and performance evaluations across a 24-hour operation cycle.
- Lead capacity planning and electrical load studies to manage system utilization and support infrastructure upgrades, including modeling electrical power distribution systems in partnership with utility providers.
- Oversee execution of end-of-life asset evaluations and hardware testing protocols for electromechanical systems, including **AC-DC power supplies**, **USB PD modules**, and **Chroma test platforms**.
- Automate maintenance data analysis and test validation routines using **Python scripting**, improving the speed and consistency of failure mode detection.
- Provide emergency on-call technical leadership, supporting urgent fault remediation and rapid revalidation of equipment post-maintenance**.**

North Carolina A&T State University **Greensboro, North Carolina, USA Autonomous Vehicle Systems Engineer Intern – SAE International AutoDrive Challenge II** **May. 2024- Aug 2024**

- Led the architecture, design, and implementation of core wiring systems for Level 4 autonomous vehicle platforms, ensuring robust power distribution and sensor integration across multiple ECUs and actuators.
- Coordinated with cross-disciplinary teams (software, controls, perception, and mechanical) to resolve complex integration challenges, enhancing vehicle system connectivity, reliability, and maintainability.
- Developed and maintained system-level wiring schematics and cable harness documentation using industry-standard tools, facilitating efficient prototyping and hardware validation.
- Defined project timelines and deliverables, proactively mitigating schedule delays and budget overrun risks by adjusting workstreams and reallocating technical resources.
- Supported the testing and debugging of system-level electrical architectures under simulated and real-world conditions, ensuring functional safety, CAN bus integrity, and fault tolerance.
- Collaborated with cybersecurity and safety teams to ensure compliance with autonomous vehicle communication protocols and system-level security requirements.
- Provided hands-on support for component installation, hardware-software interface debugging, and integration of lidar, radar, and camera modules with vehicle compute platforms.
- Played a vital role in preparing the vehicle for milestone presentations and validation reviews, contributing to the successful achievement of critical Year 2 performance objectives in the AutoDrive Challenge.

Heinekens N. V. -Nigerian Breweries Plc **Ijebu-Ode, Ogun State, Nigeria Maintenance Supervisor (Preventive & Reliability Engineering) Sept. 2019 – Aug. 2023**

- Supervised a multidisciplinary maintenance team responsible for high-speed bottling and packaging lines, overseeing daily operations, work assignments, and technical troubleshooting.
- Led the implementation of preventive and predictive maintenance programs that reduced unplanned downtime by **30%** and maintained **98% line availability** for four consecutive quarters.
- Managed asset lifecycle through **IBM Maximo**, including work order planning, root cause analysis (RCA), spare parts optimization, and performance reporting.
- Directed installation, commissioning, and optimization of **Krones** and **Sidel** production lines, increasing throughput by **25%** through equipment reconfiguration and reliability improvements.
- Championed **reliability-centered maintenance (RCM)** initiatives and continuous improvement projects, achieving sustained reductions in mean time to repair (MTTR) and maintenance costs.
- Developed and tracked **maintenance KPIs**—including OEE, MTBF, and asset utilization—to ensure data-driven decision-making and longterm equipment health.
- Trained and mentored junior engineers and technicians on preventive maintenance, safety protocols, and equipment diagnostics, building a high-performance technical culture.

- Ensured compliance with **ISO 45001**, **HACCP**, and **GMP** standards; served as certified **Safety Peer Educator** leading factory-wide risk reduction campaigns.
- Collaborated cross-functionally with OEMs and plant engineering teams to drive **energy efficiency** and **sustainability** upgrades.
- Oversaw shutdown planning, manpower scheduling, and execution of major equipment overhauls using **Critical Path Method (CPM)** principles to minimize production interruptions.

Procter & Gamble (P&G) **Oluyole Plant, Oyo State, Nigeria Safety Fire Watch Intern.** **March. 2014 – Aug. 2015**

- Collaborated closely with the plant's EHS (Environment, Health & Safety) team to conduct daily fire risk assessments, ensure adherence to fire safety protocols, and maintain a hazard-free work environment in accordance with OSHA and company safety standards.
- Monitored hot work activities (welding, grinding, cutting) to prevent fire incidents by enforcing proper permit-to-work systems, fire extinguisher placement, and continuous hazard surveillance.
- Supported emergency preparedness efforts by participating in fire drills, alarm system testing, and safety signage inspections to enhance plant-wide readiness and awareness.
- Assisted in the installation and inspection of **cable tray systems**, ensuring structural integrity, proper grounding, and fire-resistant routing for electrical safety and operational efficiency.
- Documented and reported near-miss incidents, hazards, and unsafe practices, collaborating with supervisors to implement corrective actions and promote a proactive safety culture.
- Worked alongside electricians and maintenance engineers during plant shutdowns to uphold lockout/tagout (LOTO) procedures and reduce risk during equipment servicing.
- Participated in routine safety audits and equipment inspections, contributing to a **zero-incident record** during the internship period.

PROJECTS AND RESEARCH

- SAE International AutoDrive Challenge II **Dec. 2023 – Dec. 2024**
- Installation of Filler and Bottle Washer production line machines of Nigerian Breweries Plc **Jun. 2021 – Nov. 2021**
- Solar-powered Lamp Design **Jan. 2016 – Jul. 2017**

AWARD, HONORS, CERTIFICATION AND TRAINING

- Cybersecurity Certification (North Carolina A&T State University) **2023 – 2024**
- Lean Six Sigma, Green Belt **Certification** (Quality America Inc. & NCAT) **Apr. 2024**
- Mechatronics Training **Certification**, Maintenance Technologies Certification (NB Plc/ITF-NECA) **Apr. 2019**

PROFESSIONAL ORGANISATIONS AND MEMBERESHIPS

- Member of the Society of Automotive Engineers (SAE) International **May. 2023 - Present**
- Member of the National Society of Black Engineers Aug. **2022 - Present**
- Member of the International Association of Engineers **Mar. 2021 – Present**

LEADERSHIP, VOLUNTEER EXPERIENCE & INVOLVEMENT

- Vice President Intern, Aggies In Technology **July 2024 – Dec 2024**
- Participating in leadership development and organizational planning for Fall 2024 **June 2024**
- Graduate Student Association, Nominated Executive Board Member **Apr. 2024**
- Volunteering at the FIRST LEGO League Robotics competitions **Nov. 2023**
- Volunteering at the Graduate School Exploration Fair **Aug. 2023**
- Volunteering at the Campus Community Garden of the NCAT **Sep. 2023**
- Peer Educator at the Heineken Company **Jun. 2020 – Aug. 2022**