Damian Etienne Ernesta

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HARD SKILLS

Power System Analysis & Fault Calculation | Power System Protection & Relay Coordination| MATLAB/Simulink/PowerWorld for Power Systems Simulation | High Voltage Engineering & Safety Standards | Embedded Systems (Raspberry Pi, ESP32, Arduino, sensors) | Circuit Design (Analog & Digital)

SOFT SKILLS

Technical Report Writing & Documentation | Public Speaking & Technical Presentation | Team Collaboration in Engineering Projects | Self-learning & Research Adaptability | Time Management & Multitasking | Professional Ethics & Engineering Responsibility | Project Management & Gantt Planning

EDUCATION

De Montfort University (DMU), UK.
Master of Engineering (MEng) *Sept 2021 - Sept 2025*

Asia Pacific University of Technology & Innovation (APU), Malaysia
Bachelor of Electrical & Electronic Engineering with Honours *Sept 2021 - Sept 2025*

- Relevant Coursework: Generation, Transmission and Distribution of Electrical Power, Power System Analysis, Switchgears & Protection, High Voltage Engineering, Electrical Machines, Power Electronics & Drives, Control Systems Engineering, Instrumentation & Measurement

School Of Advanced Level Studies (SALS), Seychelles

- A-LEVEL Subjects: Mathematics, Physics, Computer Science *Jan 2019 - Dec 2020*

WORK EXPERIENCE

Internship at Public Utility Corporation (PUC)
Intern *Jul 2024 - Oct 2024*

- Rotated across 7+ departments including Inspectorate, Distribution, Planning, Power Station, Solar PV, Wind Turbine, and Underground Projects.
- Conducted BS7671 standard testing: loop impedance, PSC, polarity, voltage, phase rotation in hotels and substations.
- Assisted in smart meter installations, CT meter configuration, and transformer tap changer operations (on-load/off-load)
- Witnessed relay protection settings, circuit breaker configurations, and backup generator ATS systems.
- Performed high-voltage underground cable jointing, ARM fault detection, and insulation resistance testing (Megger, VLF)
- Carried out maintenance on three 750KW capacity wind turbines and 5MW/1MW solar PV systems (RISO & leakage current tests, inverter diagnostics)
- Operated within power stations: SCADA system monitoring, generator inspections, diesel engine servicing, turbocharger and radiator maintenance.
- Participated in GIS mapping, SCE documentation, and electrical layout planning for customer supply requests.
- Practiced strict substation safety protocols including open-point creation and grounding using earth rods.

Internship at Public Utility Corporation (PUC)
Intern *Apr 2021 - Jun 2021*

- Observed engineers across departments including Inspectorate, Distribution, and Planning sections.
- Gained initial exposure to electrical meters, transformer stations, and distribution panels.
- Observed basic testing procedures such as voltage checks, meter verification, and polarity testing.
- Assisted in simple site inspections and learned basic GIS layout concepts for new service connections.
- Developed foundational understanding of safety practices in substation and field environments.
- Strengthened interest in power systems, leading to pursuit of Electrical Engineering degree.

PROJECTS

1. Optimal Capacitor Placement using Zebra Optimization Algorithm (ZOA) (Final Year Project)

- Developed a MATLAB implementation of ZOA for capacitor sizing and placement in the IEEE 33-bus system.
- Included convergence, consistency tests, and objective function comparisons (loss, cost, power factor)

2. AI-Powered Smart Glasses for Visually Impaired (Group Design Project)

- Used Raspberry Pi 5, AI camera (IMX500), GY-NEO6MV2 GPS, and LiDAR mapping.
- Features: Object detection (YOLO), Text recognition (OCR), Audio feedback (gTTS), Scene detection (Azure) and GPS to Voice Navigation System (Azure Maps.)

3. MATLAB App Designer GUI for Relay Coordination

- Designed a MATLAB App Designer GUI for overcurrent relay coordination with dropdown options to select between Pre-defined and Custom parameter modes, enabling dynamic input of Plug Setting, TMS, and Curve Type.
- Simulated coordination curves and calculated operating time, selectivity, and coordination margin for multiple relay zones using inverse-time (IEC IDMT) and definite-time (IEEE CO8) relay models.

4. IoT-Based Smart House Automation System

- Designed and implemented a smart home prototype using ESP32 with integration of motion sensors, temperature sensors, servo motor, relays, and Blynk mobile app.
- Enabled real-time control of home appliances (lights, door, alarm system) via smartphone.
- Implemented notification alerts for motion detection and environmental monitoring.

ACHIEVEMENTS

2022 Completed MATLAB Onramp

2018 Participated in Hour of Code

2017 Represented Team Seychelles at First Global Challenge in Washington, DC