Basel Mokhtar

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ABOUT ME

Electrical Operations Engineer with solid expertise in power distribution network operation and maintenance, load forecasting, data analytics, and power system optimization. Strongly motivated to engage in research on advanced load forecasting methods, V2G technologies, and Virtual Power Plants. Holds IELTS Academic certification (Overall Band Score: 7.5) and Training of Trainers qualification.

EDUCATION AND TRAINING

Bachelor of Engineering

Portsaid University [20/09/2012 – 16/07/2017]

City: Portsaid | **Country:** Egypt | **Website:** https://psu.edu.eg | **Field(s) of study:** Engineering, manufacturing and construction: • Electricity and energy | **Final grade:** Very Good with Honor “80.4%, Ranked "9" | **Thesis:** Demand side management using PLC

WORK EXPERIENCE

Canal Electricity Distribution Company – Port Said, Egypt

Website: https://eehc.gov.eg/CMSEehc | **Email address:** info@eehc.gov.eg | **Name of unit or department:** Operation - **Business or sector:** Electricity, gas, steam and air conditioning supply

Electrical Operation Engineer

[01/07/2025 – Current]

- Monitor and operate distribution systems (mostly overhead lines) to ensure reliability and safety.
- Perform switching operations, including isolation and re-energizing circuits, following standard procedures.
- Conduct insulation resistance and continuity testing using Megger instruments to assess cable and equipment integrity.
- Perform Hi-Pot tests to evaluate insulation strength under high-voltage conditions.
- Utilize Time Domain Reflectometer and Thumping methods to accurately locate and analyze underground cable faults.
- Maintain accurate records of switching operations, faults, load reports, and asset conditions.
- Carry out expansion planning for distribution feeders based on maximum load demand analysis, ensuring network reliability.
- Contribute to asset management and preventive maintenance planning.

Freelance – Portsaid, Egypt

Website: https://baselm11.github.io/ | **Business or sector:** Information and communication

Data analyst

[12/04/2022 – Current]

- Design and develop interactive dashboards for factories and the technical training department using Power BI and Excel to support data-driven decision-making.
- Leverage SQL queries, Python, and advanced Excel functions to extract, clean, and analyze datasets from multiple sources.
- Apply predictive analytics and correlation analysis to identify trends, optimize processes, and improve operational efficiency.
- Perform time series forecasting using statistical models (e.g., ARIMA) and deep learning techniques (e.g., LSTM).
- Delivered training sessions to colleagues and college students on performing data analysis using Excel.

El-Sewedy Technical Academy – Portsaid, Egypt

Website: https://www.sta.edu.eg/ | **Email address:** basel.mokhtar@sta.edu.eg | **Name of unit or department:** Technical Training - **Business or sector:** Education

Electrical Technical Trainer

[15/09/2023 – Current]

- Deliver in-depth instruction on theoretical electrical engineering topics, including power distribution systems, electrical machines, control circuits, and safety regulations.
- Conduct practical training in the electrical laboratory, mentoring students in operating and testing electrical equipment, performing transformer diagnostics, controlling motors, designing traditional control circuits, and programming/implementing PLCs.
- Strengthen students' industry preparedness through job-based learning, including guided factory visits to observe and engage in real-world industrial processes.

General Organization for Export and Import Control (GOEIC) – Portsaid, Egypt

Website: https://www.goeic.gov.eg/en

Electrical engineer

[30/06/2020 – 15/09/2023]

- Executed comprehensive electrical testing on imported batteries using a 256-channel system.
- Performed charge/discharge cycle analysis and capacity evaluation under controlled environmental conditions.
- Tested multiple battery types, including Li-ion, Ni-Cd, and Ni-MH batteries.
- Collected imported battery samples and coordinated laboratory testing to ensure compliance with IEC 61951/2017.

SKILLS

Data Analytics & AI

SQL and MS-SQL / C,C++,Python,Arduino / Analytical skills / Microsoft Excel / Mathematical Modelling / AI, Deep Learning / Power Query ,Power BI / Forecasting Methods / Data Visualization (Tableau, Power BI) / descriptive statistics with excel

Electrical Power and Machines

Classic control & PLC / Electrical equipment testing (transformers, cables, circuit breakers) / Load and outage data analysis for operational improvements / Transformer operation and maintenance / Switchgear and circuit breaker operation

PUBLICATIONS

[2023]

A Novel Short Electric Load Forecasting Approach Using a Multivariate Transformer Neural Network and CEEMDAN This study employed complete ensemble empirical mode decomposition with adaptive noise (CEEMDAN) combined with a transformer neural network (TRNN) to enhance electrical load forecasting. CEEMDAN decomposed the data into intrinsic mode functions (IMFs), which are clustered and forecasted individually before aggregation. Trained on six months of hourly data, the proposed method outperformed Vanilla TRNN, CEEMDAN-LSTM, SARIMA, and SARIMAX models.

- DOI: 10.1109/MEPCON58725.2023.10462386
- Cited by: 2 Papers

Journal Name: 2023 24th International Middle East Power System Conference (MEPCON) | **Publisher**: IEEE

PROJECTS

[15/08/2023 – Current]

Performance Improvement of Utilities Power Grids with Virtual Power Plant Integration

- Mathematically modeled and optimized a grid-connected Virtual Power Plant (VPP), integrating load demand, PV generation, battery energy storage systems (BESS), and EVs.
- Forecasted day-ahead PV generation, load demand, electricity prices, and EV arrival/departure times using AI-based models.
- Applied mixed-integer nonlinear programming within an Energy Management System (EMS) to optimize power profiles, enhancing self-sufficiency, self-consumption, load factor, and cost savings.
- Analyzed EV behavior and travel patterns, assessing the impact of uncontrolled charging on the utility grid.
- Applied time-of-use pricing to economically incentivize EV prosumers to support peak shaving via V2G.

CERTIFICATIONS

[German Society for International Cooperation, 23/11/2024]

Trainer of Trainers (TOT) The Egyptian model of in-company trainer training in competence-based education focuses on developing the training and educational competence profile of candidates. The professional and occupational pedagogical knowledge, skills, and abilities are aligned with the Egyptian model of in-company trainers training developed by TCTI - GIZ - Egypt.

[British Council, 14/09/2024]

IELTS ACADEMIC (Overall Band Score: 7.5 - CEFR Level: C1) Listening 8.5 | Reading 6.5 | Writing 6.5 | Speaking 7.5