NAJIYA OMAR

PhD, P.Eng

CONTACT

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ACADEMIC EDUCATION

Doctor of Philosophy: Electrical and Computer Engineering
Dalhousie University | Halifax, NS | 2023

- Best Oral Presentation in IEEE-CEEPE (2021)
- FGS Allocation – Scholarship (2019, 2021)
- Bruce and Dorothy Rosetti Engineering Research (2020)
- Engineering Excellence Award Scholars (2019, 2020)

Master of Applied Science: Electrical and Computer Engineering
Dalhousie University | Halifax, NS | 2017

- Faculty Poster Award Second Prize, ECE Graduate Conference (2016)
- FGS Allocation – Scholarship (2015)

Bachelor's in electrical and computer engineering with Distinction
Sirte University | Sirte, Libya | 2004

- Academic Excellence Award

PROFESSIONAL CERTIFICATION

Professional Engineers (P.Eng)
Association of Engineers Nova Scotia |
Halifax, NS |2024

SKILLS

➢ TECHNICAL

- Python for Statistical Analysis, Data Science and Machine Learning
- Matlab Signal Processing Toolbox
- Power system simulation software (PSS/E)
- Power BI, Tableau

PROFESSIONAL SUMMARY

I am an experienced electrical engineer with a passion for leveraging big data for energy management system transformation. My area of expertise is in predictive analysis, optimization theory, and advanced technologies to create smart energy management solutions. With a deep understanding of energy consumption patterns, renewable energy sources, weather data, statistical modelling, and cutting-edge optimization techniques. I am interested in developing scalable technologies that enhance efficiency, reduce costs, and minimize environmental impact. My work involves integrating solar and other renewable resources to deploy machine learning algorithms for predictive modeling and system optimization.

PROFESSIONAL EXPERIENCE

RESEARCH FELLOW

Green Power Labs Inc , Dartmouth, NS | January 2022 – December 2023

- Optimized the data downloads by writing a code utilizing "GOES-2-Go" and s3fs python libraries to access the NOAA's GOES-16 weather dataset in Amazon Web Services (AWS).
- Automated downloaded GOES-16 satellites images with different temporal and spatial resolutions, and map projections.
- Utilized the GOES-16 cloud products and weather data for proposing Could Index (CI) dataset.
- Applied a map projection that positioned all the extracted variables from the ABI cloud products to the same projected grids.
- Selected appropriate thresholds and computing measurements for CI and prepared the obtained CI measurements to be used by Machine Learning predictive algorithm.
- Employed the PVlib python package for calculating irradiance components.

RESEARCH ASSISTANT

| Nova Scotia Community College, Dartmouth | January 2018 - May 2018

- Developed and implemented experimental designs for data collection in Proteus DS simulation, utilizing skills in Matlab, resulting in improved accuracy and efficiency in data retrieval.
- Designed and implemented visualization solutions for inconsistencies in Remotely Operated Vehicles (ROV) simulation data, providing expertise in cleaning, organizing, and combining multivariate data for maximum utility.
- Conducted complex analyses of ROV data to determine feasible speed ranges for safe marine operations and determine capacity requirements of ROV thrusters, utilizing advanced graphing techniques and data visualization tools.
- Collaborated closely with team members, taking feedback and implementing changes to improve tool functionality and usability.
- Designed and maintained research databases and information systems, ensuring data integrity and accessibility for use in future research projects.

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SKILLS

➢ PROFESSIONAL

- Exceptional organizational, analytical, and time-management skills
- Excellent interpersonal skills
- Works well independently, collaboratively, and in leadership roles

PROFESSIONAL TRAINING AND SEMINARS

Python for Time Series Analysis and Forecasting | April 2021
Machine Learning A-Z: AI, Python & R | 2022

Programing for AI | NSCC
April 2025

EXPERIENCE CONTINUED...

PROGRAMMER AND ELECTRICAL ENGINEER

AL-Mofida Construction Company | Sirte,Libya| May 2009 – May 2013

- Collaborated with a multidisciplinary team to successfully deliver government-funded energy projects with a budget of approximately $500,000, playing a key role in the projects' success.
- Leveraged sophisticated Artificial Neural Network (ANN) applications to accurately predict and estimate power consumption for government energy projects in Sirte, using advanced statistical metrics to evaluate algorithm performance and ensure accuracy rates that met or exceeded project requirements.
- Applied Machine Learning (ML) algorithms to classify datasets for pattern recognition tasks, using best practices in data management to streamline and optimize the data analysis process.
- Attended regular project meetings to provide up-to-date insights and outcomes, and skillfully managed the financial plan for each project, optimizing resource allocation and budgeting to meet project goals.

PUBLICATIONS

- Optimized Feature Selection Based on a Least-Redundant and Highest-Relevant Framework for a Solar Irradiance Forecasting Model," in IEEE Access (2022)
- Seasonal Clustering Forecasting Technique for Intelligent Hourly Solar Irradiance Systems", IEEE Transactions on Industrial Informatics (2022)
- LSTM and RBFNN Based Univariate and Multivariate Forecasting of Day-ahead Solar Irradiance for Atlantic Region in Canada and Mediterranean Region in Libya", in IEEE-CEEPE (2021)
- Optimizing Classifier Performance for Parkinson's Disease Detection", in IEEE-CCECE (2017)
- Feature Fusion Techniques Based Training MLP for Speaker Identification System". In IEEE-CCECE (2017)

REFERENCES AVAILABLE ON REQUEST