


Fay Majid Elhassan PMP

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Education

African Institute of Mathematical Sciences(AIMS)

M'bour, Senegal

African Master of Machine Intelligence (AMMI), M.Sc in Mathematics, Major in Machine Learning. □

Jan 2023 - Current

- In partnership with **Google** and **Facebook(Meta)**.
- **6%** Acceptance rate.

Courses: Machine learning, Deep Learning, Natural language Processing , Multimodality, Computer vision, Reinforcement Learning.

University of Khartoum

Khartoum, Sudan

B.Sc. Electrical and Electronic Engineering (**Honours**)

Oct 2014 - Oct 2020

Courses: Nonlinear Systems, Neural Networks and Fuzzy Logic, Database & Algorithms, Statistics.

Work Experience

Q-Parts

Remote

Machine Learning Engineer

July 2023 - November 2023

- Developed and improved machine learning models and NLP techniques for a **PostgreSQL-based LLM chatbot**.
- Managed AI project pipelines, coordinating data analysis, preprocessing.

STEM-AWAY for Professional Training and Coaching

Remote

Principal Technical Lead - Machine Learning

June 2023 - September 2023

- Promoted to Principal Lead across diverse global teams, including Data Visualization, **AWS**, and **GPT**.
- Pioneered global AI project Pipeline , demonstrated versatility by deploying chatbot versions using **Streamlit** and **AWS**.

Dal Group

Khartoum, Sudan

Project Manager

Nov 2022 - May 2023

- Conducted supply chain **analysis**, **forecasting**, and **optimization** study for 6 business units in Dal engineering division.
- Automated procurement, inventory, and invoicing for Sudan's **largest** agriculture project, **Project Green**, via a portal connecting suppliers and customers.

Business Intelligence Specialist

April 2022 - Oct. 2022

- Processed data using Microsoft Excel, Microsoft SQL Server Management Studio **SSMS**, and Visual Studio to ensure quality.
- Utilized forecasting models (**Arima**, **Sarimax**, **Prophet**) to predict sales for over **200** Dal food products, achieving **84%** accuracy with the Prophet model.

Data Scientist

June 2021 - March 2022

- Analyzed customer feedback, identified trends, and developed improvement recommendations.
- Led digital transformation in the Marketing Department, applying **k-means clustering** for data analysis and creating inventory classification.

University of Khartoum

Khartoum, Sudan

Teaching Assistant

Feb 2021 - Dec 2022

- Taught Control System Theory and Computer-Aided Design to third and fourth-year university students, providing tutorials and individual assistance.
- Prepared and conducted labs for Electronic Instrumentation Measurement and Postgres-SQL for fifth and third-year students.

Publications

Comparison of deep reinforcement learning algorithms in enhancing energy trading in microgrids □

2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCEEE)

2021

- Authors: Fay Elhassan, Moayad Elamin, Mahmoud A. Manzoul
- Paper: <https://ieeexplore.ieee.org/abstract/document/9429565>

An Economic Evaluation of Islanded Microgrids Implementation in Northern Kordofan State □

2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE)

2021

- Authors: Fay Elhassan, Moayad Elamin, Mahmoud A. Manzoul
- Paper: <https://ieeexplore.ieee.org/document/9429680>

Projects

Hybrid AI Recommendation Chatbot: AI Assistants □

Remote

STEM-AWAY Company for Professional Training and Coaching

June 2023 - Oct 2023

- Developed a Hybrid AI Chatbot using **TF-IDF Vectorization** and **Cosine Similarity** for content and collaborative filtering recommendations.

Code:<https://github.com/FayElhassan/HybridRecommendationChatbot>

DDPG & TD3 Implementation with PyBullet □

M'bour, Senegal

AIMS-Senegal

Sep 2023 - Oct 2023

- Developed **DDPG** and **TD3** algorithms using **JAX** for PyBullet's realistic robotic environments.

Code:https://github.com/FayElhassan/DDPG_IMP_PYBULLET

PostgreSQL-Based LLM Chatbot □

Egypt/Senegal

Q-parts

July 2023 - Oct 2023

- Developed a PostgreSQL-based chatbot using **LLM's** deployed in Streamlit, optimizing query generation, implementing caching, and enhancing database interaction efficiency.

Code:<https://github.com/FayElhassan/Postgreschat>

Harnessing AI for Sustainable Agriculture and Climate Adaptation: Reinforcement Learning Approach □

M'bour, Senegal

AIMS-Senegal

July 2023 - August 2023

- Analyzed agricultural data, optimizing cherry tomato cultivation with statistical and ML methods, implementing **SAC** and **PPO** algorithms for environmental modeling.

Code:<https://github.com/FayElhassan/AI-for-Sustainable-Agriculture>

Enhancing Energy Trading in Microgrids in Northern Kordofan-A Reinforcement Learning Approach □

Khartoum, Sudan

University of Khartoum

Dec 2018 - Oct 2020

- Established three villages, created a **Matlab/Simulink** microgrid simulation, and designed RL environments with **DRL** algorithms, achieving a **22% ROI** in less than **10 years** through economic evaluation.

Code:<https://github.com/FayElhassan/Enhancing-energy-trading>

Skills

Programming Languages		Libraries		Tools/Techniques	
Python	<div><div></div></div>	Pytorch	<div><div></div></div>	Streamlit	<div><div></div></div>
SQL	<div><div></div></div>	Numpy	<div><div></div></div>	Matlab	<div><div></div></div>
PostgresSQL	<div><div></div></div>	Matplotlib	<div><div></div></div>	Git	<div><div></div></div>
R	<div><div></div></div>	Scikit-learn	<div><div></div></div>	Webscraping	<div><div></div></div>
C++	<div><div></div></div>	Pandas	<div><div></div></div>	PowerBI	<div><div></div></div>
Languages					
English	<div><div></div></div>				
Arabic	<div><div></div></div>				

Achievements

2021	Above Traget , Project Management Professional(PMP)	Egypt
2022	Certified Application Associate , SAP Analytics Cloud-Planning	Sudan
2022	Certified Application Associate , SAP Analytics Cloud	Egypt
2022	Certified Associate , SAP Activate Project Manager	Egypt
2022	Certified Application Associate , Business Process Integration with SAP S/4HANA 2020	Sudan
2022	Certified Application Associate , Reporting, Modeling and Data Acquisition with SAP BW/4HANA 2.x	Sudan
2022	Elite , Google Data Analytics Professional Certificate	Coursera