

Fay Majid Elhassan

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Personal Profile

Highly accomplished data and AI professional with a strong passion for innovation. Published author with three IEEE Xplore papers stemming from a focus on algorithms and machine learning to enhance control strategies. Actively engaged in multiple data science and analytics projects, committed to continuous upskilling. Demonstrated leadership through roles like Vice Chair of IEEE Sudan Coordination Committee and involvement in IEEE committees. Industry experience as Project Manager/Data Scientist, holding PMP and SAP Associate Consultant certifications. Research interests in reinforcement learning and predictive analysis. Dedicated to promoting diversity and inclusion through leadership in various tech organizations. Aims to leverage skills for social impact, addressing challenges and making meaningful contributions in data and AI.

Education

African Institute of Mathematical Sciences(AIMS)

M'bour, Senegal

M.Sc of Machine Intelligence

Jan 2023 - Current

- **Courses:** Foundation of Machine learning, Deep Learning, NLP1, NLP 2, Computer vision, Reinforcement Learning, Programming for Data Science, Knowledge Representation and Reasoning, Learning Skills through Case Studies, Machine Learning, Statistical Learning

University of Khartoum

Khartoum, Sudan

B.Sc. Electrical and Electronic Engineering (Honours)

Oct 2014 - Oct 2020

- Published three scientific papers in IEEE Xplore based on the research thesis.
- **Courses:** Nonlinear Systems, Computer-Based Systems, Neural Networks and Fuzzy Logic, Digital Image Processing, Digital Signal Processing, Database & Algorithms, Statistics.

Publications

CONFERENCE PROCEEDINGS

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

Moayad ELamin, Fay Elhassan, Mahmoud A Manzoul

2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE), 2021

Enhancing Energy Trading Between Different Islanded Microgrids A Reinforcement Learning Algorithm Case Study in Northern Kordofan State

Moayad ELamin, Fay Elhassan, Mahmoud A Manzoul

2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE), 2021

An Economic Evaluation of Islanded Microgrids Implementation in Northern Kordofan State

Fay Elhassan, Moayad ELamin, Mahmoud A Manzoul

2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE), 2021

University Projects

Harnessing AI for Sustainable Agriculture and Climate Adaptation: RL Approach

M'bour, Senegal

AIMS-Senegal

July 2023 - Present

- Analysing data of weather, heat, lighting for cherry tomatoe .
- Study and implement discrete and continuous action space environments to explore various RL algorithm in the maximizing and obtaining the optimal policy.
- Specific case studies were taken for water level , heat and light.
- **Technical Skills:** Python (PyTorch, NumPy, Matplotlib, Pandas), gym, Tensorboard, Reinforcement Learning, Overleaf, LaTeX.
- **Soft Skills:** Time Management, Teamwork, Presentation skills, Report writing.

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

Khartoum, Sudan

University of Khartoum

Dec 2018 - Oct 2020

- Defined three Villages in Northern kordofan and built microgrid simulation using Matlab and inputting data obtained from Ministry of Energy (Renewable energy).
- Designing the RL environment , Reward Function among the microgrids and balancing the supply and demand between the three microgrids one being the main one and tried various DRL (DDPG, PPO, ...).
- Obtaining an Economic Evaluation for the microgrids and ROI to 22% within less than 10 years
- **Technical Skills:** Matlab , SIMULINK, PVSYS, git, Python (PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn), seaborn, tensorflow, Reinforcement Learning, Overleaf
- **Soft Skills:** Presentation skills, Risk management, Research , Report writing, Logical Thinking, Critical Thinking.

Work Experience

STEM-AWAY

Remote

Principal/Machine Learning Technical Lead - Summer Internship

June 2023 - Present

- As ML Lead defined and planned the AI project pipeline along with giving a schedule for the whole project stages as well as held technical sessions.
- Monitored and collaborated with the team in the stage of data collection and EDA ,defined the ML models to be used and distributed the work same time working on building a chatbot with integrated recommendation system within the platform.
- Promoted to Principal Lead along with the ML lead had to collaborate and monitor with the Data visualization and the AWS,GPT team to integrate the ML work and align them in one end product .
- Technical Skills:** Python (PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn), C++, PowerBI, Tableau, Microsoft SQL Server, Scripting,AWS Lamda,AWS, Git.
- Soft Skills:** Teamwork, Time Management, Communication, Presentation Skills, Leadership, Design Thinking, Analytical Skills.

IEEE-SUDAN

Khartoum, Sudan

Vice-Chairman

Oct 2019 - Present

- Led and initiated a digitization project, overseeing processes such as registration, payments, certificates, and approvals. Managed a team with 70% female participation.
- Pioneered a professional coaching program with a 50% participation rate of women.
- Established the Kids in Technology club, focused on solving SDG problems (Clean Energy, Climate Action, etc.) through technology, with an age range of 8-16.
- Advocated for scientific research integration between academia and industry, organizing field trips to various sectors.
- Technical Skills:** Python (PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn), C++, PowerBI, Tableau, Microsoft SQL Server, Scripting, Git.
- Soft Skills:** Teamwork, Time Management, Communication, Presentation Skills, Leadership, Design Thinking, Analytical Skills.

Dal Group

Khartoum, Sudan

Data Scientist/Project Manager - Graduate Development Program

May 2021 - May 2023

- Collaborated in a team of two on predicting sales for over 200 products (2022) using Python and QGIS. Designed models (Arima/Sarimax/Prophet) to forecast sales per product and conducted benchmarking, achieving an 84% accuracy with Prophet.
- Developed data pipelines to source missing data and contributed to the creation of a communication portal for supply and demand processes, including finance dashboards and business unit collaboration.
- Played a significant role in the main digital transformation project within the Marketing Department. Utilized clustering models (k-means using scikit-learn) to analyze structured and unstructured data, and prepared data for inventory classification. Presented insights through data visualization dashboards.
- Technical Skills:** Python (PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn), C++, PowerBI, Tableau, Microsoft SQL Server, Scripting, Git.
- Soft Skills:** Teamwork, Time Management, Communication, Presentation Skills, Leadership, Design Thinking, Analytical Skills.

Skills

Programming	Python (Pandas, PyTorch, NumPy, Scikit-learn. etc.), R(ggplot2), PHP, C/C++, HTML/CSS, JavaScript, PostregsSQL, PyTorch, TFLite, OpenAI Gym, Matplotlib, Seaborn
Miscellaneous	Google Cloud, Matlab,SAP,Power BI ,L ^A T _E X(Overleaf/R Markdown), Tableau, Microsoft Office,Figma, Git.
Soft Skills	Leadership,Analytic thinking , Project Management ,Crisis Management,Work under Pressure Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation,Design Thinking.

Achievements

2021	Above Traget , Project Management Professional(PMP)	Egypt
2021	7.5 , International English Language Testing System(IELTS)	Sudan
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 , SAP Young Professional Program	Sudan
2022	Elite , Google Data Analytics Professional Certificate	Coursera
2018-2019	Elite , ICT Professional Foundation Program	Sudan

Interests

Cooking	I love cooking. I am an expert in most various cusine cooking, enjoy baking and making my own pizza.
Art	I have always enjoyed writing poetry since I was a child. throughout the years my writing expanded and looking to expand to blogs.
Video Games	I always had the gaming gene. I mostly play on my phone and occasionally on my switch.
Swimming	I started swimming when I was 12. Going through submerged things while holding my breath was the most exciting part.

Languages

English Professional proficiency
Arabic Native proficiency

References available upon request.