Mohamed Bekheet Abdelall *Machine Learning Engineer*

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PROFESSIONAL EXPERIENCE

Machine learning engineering, *FORTE CLOUD* 07/2023 – present
Egypt

- Developed and deployed machine learning models for **computer vision**, **speech recognition**, and **natural language processing** (NLP), including applying **LLM techniques** to address complex business challenges.
- Specialized in **Generative AI**, utilizing **AWS Bedrock** for generating and embedding models, and implemented clustering algorithms.
- Designed and implemented **AWS architecture**, following AWS design guides, optimizing cloud services, and managing deployment using **EC2, S3, Bedrock, and SageMaker**.
- Integrated cloud services, particularly **AWS** (e.g., **Comprehend**, **Tesseract**, **Rekognition**, and other AWS services), to enhance deployment efficiency and scalability.
- Monitored and optimized **AWS service costs**, detecting and analyzing the cost implications of machine learning solutions to ensure efficient resource usage.
- Created Proof of Concepts (POCs) using **Streamlit**, showcasing the potential impact of ML models.
- Collaborated with cross-functional teams of data scientists, engineers, and DevOps to deliver robust ML solutions that aligned with customer needs and business goals

Teacher Assistant, *Ain Shams university* 01/2023 – 06/2023
Cairo, Egypt
Assisted in teaching courses related to computer science and artificial intelligence, providing support to students and faculty in both theoretical and practical aspects.

Valeo Techie Degree Trainee, *Valeo* Cairo , Egypt, Egypt
Completed an intensive 3-month training program focusing on **Embedded C**, **SW to HW Interfacing**, **Automotive Bus Technology**, and **AUTOSAR**.

Machine learning engineer, *Freelancer* 06/2021 – 02/2022
Cairo, Egypt
Developed a computer vision application for a client. Used OCR to extract text and object detection to identify objects in images. The application could run on local servers or directly on devices (edge deployment). Built a user-friendly interface with PyQt and ensured smooth performance through testing (load testing & Flask).
This project showcases my skills in:
- Computer Vision (OCR & Object Detection)
- Deployment (Local & Edge)
- GUI Development (PyQt)
- Testing & Optimization
- Python (Flask & Image Processing)

EDUCATION

Master of Science at Computer and information sciences scientific computing department, 03/2023 – present
Ain shams university cairo, Egypt

Master of Engineering Electrical and Computer Engineering in Artificial Intelligence and Data Science, *University of Ottawa* 05/2022 – 01/2023
Ottawa, Canada
Grade :A+ Excellent
Relevant coursework: Machine Learning, Data Science, Natural Language Processing (NLP), Smart Cities, Cloud, AI for Cybersecurity, and Computer Vision.

Computer and information sciences, *Ain Shams university* 09/2017 – 07/2021
Cairo, Egypt
I graduated with a very good grade with an honors degree and Excellent grade in graduation project

CERTIFICATES

- Associate Cloud Engineer Certification
- AWS Certified Machine Learning – Specialty
- IBM - Artificial Intelligence Analyst - Mastery Award 2019
- Microsoft Certified: Azure Data Scientist Associate
- AWS Certified Cloud Practitioner
- Nano Degree program in DeepLearning

PROJECTS

CopticTrans (graduation project of my master), *Sponsor: Microsoft*
CopticTrans is a Translation application build base on AI for translating the Coptic language with an OCR feature to extract the Coptic text from images before translation.

Graduation project, *Analysis ECG signal to diagnose severe heart disease*
Build a Deep learning model it Uses ECG signal to diagnose between 14 heart disease then use the second model to detect the location of myocardial infarction if Found

Face mask detection, *YOLO and faster RCNN*
detect who wears a mask, not wear, not correct ware that helps organizations to protect the people from **Covid-19**

sentiment analysis in arabic tweets, *NLP and transfer learning*
Analyze Arabic tweets to predict if a tweet is negative or positive or natural

Sentiment Analysis deployed on AWS, *sageMaker, aws lambda and deeplearning*
used sage Maker and other AWS services to deploy sentiment analysis on the cloud

RNN TV Script Generator, *by pytorch and some NLP methods to apply RNN to generate TV Script*

Data Modeling with Postgres Sparkify
Using PostgreSQL through python and SQL to create a Postgres database with tables, build an ETL pipeline and data modeling by building fact and dimension tables for a star schema for a particular analytic focus to optimize queries on song play analysis

Data Modeling with Apache Cassandra, *Apache Cassandra*
data modeling using apache Cassandra and building ETL pipeline and dealing with CSV files to preprocess them and insert them into the Cassandra database to optimize analytical Queries.

Data Warehouse With AWS Redshift, *AWS Redshift, AWS S3, Data Warehouse*
An ETL pipeline to build data warehouses hosted on Redshift. through loading data from S3 to staging tables on Redshift and executing SQL statements that create the analytics tables from these staging tables.

churn detection, *using R*
analysis of users' historical data and detect if the user will churn

SKILLS

Generative AI and Machine Learning — **Techniques:** Generative Adversarial Networks (GAN), Retrieval-Augmented Generation (RAG) Systems, Text-to-Image Models, Language Models, Prompt Engineering, Responsible Model Action Calling. | **Tools:** AWS Bedrock, SageMaker, LangChain, Open-Source Generative AI Frameworks, HypeStack..

Machine Learning and Deep Learning — Techniques: Regression, Classification, Clustering, Dimensional Reduction, Neural Networks (CNN, RNN). | Tools: NumPy, Pandas, NLTK, scikit-learn, Keras, ONNX.

Programming Languages — Python, R, C++, C#, Java, JavaScript, SQL, Bash.

Cloud Service — AWS Services: EC2, Fargate, RDS, VPC, Lambda, S3, SageMaker, Bedrock.

Database and Big Data — Microsoft SQL Server, Oracle PL/SQL, MySQL, SQLAlchemy, PostgreSQL, Cassandra, MongoDB, Spark, Hadoop.

Data Visualization — *matplotlib, Seaborn plotly*

Computer vision — Image Classification, Image Detection, Image Segmentation, OCR, OpenCV, SKImage.

Natural Language Processing — Sentiment Analysis, Text Classification and Clustering, Recommendation Systems, Chatbots, Question and Answer Systems, Prompt Engineering.

Software Engineering — Data Structures and Algorithms, Object-Oriented Programming (OOP), Git, GitHub.

SOFT SKILLS

Dale Carnegie Program
Communication skills | Leadership skills | Becoming a trusted advisor | High Impact Presentation
Business Acumen | Strategic Planning | Team Building

LANGUAGES

Arabic **English**