

EZZAT ESAM ELSAYED

AI Engineer

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github.com/EzzatEsam October Gardens, 6th of October City, Giza, Egypt

EXPERIENCE

Software Developer - Full-time VetSoft - Poultry Management Solutions

Nov 2024 - Present Nasr City, Cairo, Egypt

- Utilize cutting edge LLMs like llama3.3, gemini 2 and Deepseek to provide functionalities and enhance user experience.
- Built an intelligent chatbot user assistance system leveraging FastAPI, LangChain, and Langraph with vector database (FAISS) to provide seamless support to customers.
- Created pipelines allowing AI agents to analyze and interact with the company's SQL Server database, providing data analysis services. While ensuring secure and efficient data handling.

Intern, Using AI in Wireless Communications Zewail City of Science and Technology

2023 (3 months) Giza, Egypt

- Developed a machine learning pipeline for predicting the QOS (quality of service) of a 5G mobile network using environmental variables (temperature, longitude, latitude) and RF measurements (RSRP, SNR, bandwidth).
- Trained the pipeline on the Berlin V2X dataset achieving 7.97 mbit/s RMSE in predicting the QOS of the test split.
- The pipeline used CatBoostRegressor . And incorporated feature engineering (one hot encoding, lag features) and hyperparameter tuning to improve performance.

PROJECTS

League of Legends Assistant - A RAG Chatbot Full-Stack App Python, LangChain, ChromaDB, FastAPI, SQLAlchemy, React.js, React Router

- Designed and deployed a RAG pipeline using LangChain and ChromaDB, integrating dynamic updates from League of Legends patch notes and guides to ensure real-time knowledge accuracy.
- Used Gemini embedding models and ChromaDB for data storage and retrieval.
- Deployed via FastAPI with SQLAlchemy for database management, providing chat history persistence.
- Built a responsive frontend with React.js and styled it with TailwindCSS for a polished look.

Game Recommendation System Python, PySpark, SparkML, Word2Vec

- Created a game recommendation system utilizing a Steam reviews dataset with over 50,000 games and 41 million user reviews.
- Developed an embeddings generation pipeline using game tags and descriptions with the Word2Vec algorithm, including preprocessing steps such as tokenization and stop-words removal.
- Applied Cosine-Similarity to suggest games to users based on their preferred games.

DDPM for Image Generation: A From Scratch Implementation python ,PyTorch, torchvision

- Implemented the Denoising Diffusion Probabilistic Models (DDPM) (Ho, Jain, & Abbeel, 2020) algorithm for image generation from scratch using PyTorch and torchvision.
- Built a custom UNet architecture for the model with self-attention modules.
- Trained the model on the CelebA(64x64) and FashionMNIST(32x32) datasets and was able to generate moderate quality images.

Scene Classification Using HOG, Bag of Words, Kmeans, and SVM Algorithms Python, Numpy, Scikit-learn

- Developed a scene classification pipeline by extracting HOG features and applying Kmeans clustering to create Bag of Words descriptors.
- Trained and fine-tuned a SVM and KNN classifiers, achieving 75% test accuracy in classifying 15 distinct scene classes (LSUN mini dataset).

EDUCATION

BS. Communications and Information Engineering Zewail City of Science and Technology

2019 - 2024 Giza, Egypt

GPA: 3.61/4.00 (With Honors)

Coursework

- Artificial Intelligence
- Machine Learning
- Deep Learning
- Computer Vision
- Linear & Nonlinear Programming
- Big Data Analysis
- OOP & C++
- Discrete Mathematics
- Database Management Systems

SKILLS

Core Skills

- Machine learning
- Deep learning
- Computer vision
- Data analysis
- Visialization
- Object detection
- ETL pipelines
- Git
- Linux

Programming Languages

- Python
- C++
- MATLAB
- Java

Data Science & Analytics

- Numpy
- Pandas
- SQL
- Hadoop
- PySpark
- Matplotlib
- Seaborn
- Plotly

AI/ML Frameworks & Tools

- PyTorch
- TensorFlow
- Scikit-learn
- OpenCV
- YOLO
- Langchain
- Langgraph

Deployment

- FastAPI
- Flask
- Docker

BADGES AND AWARDS

Hacktrick 2024 - 1st Place Winner Dell Technologies

2024 New Cairo, Egypt

- Competed as part of a 4-member team in Dell's 2024 hackathon and secured 1st place.
- Achieved the highest score among 70+ participating teams.
- Tackled challenges in machine learning, computer vision, encryption, and problem-solving.

Applied Data Science Lab badge WorldQuant University

2023 Remote

- Completed eight applied data science projects involving data cleaning, exploration, ETL pipelines, machine learning models, and visualizations.