MOSTAFA ABBAS SAAD

Al Engineer

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SUMMARY

I am an Al Engineer specialized in Computer Vision, NLP, and Deep Learning, with hands-on experience in designing and deploying end-to-end Al systems. I excel in building scalable, production-ready solutions using FastAPI, Docker, and MLflow. My expertise includes LLMs, RAG pipelines, and agent-based architectures, delivering high-impact Al solutions for real- world challenges.

EXPERIENCE

Tech Member 09/2024 – 06/2027
Microsoft Student Club
A community platform for students to learn and exchange knowledge about Microsoft technologies
- Contributed to technical discussions and workshops on emerging technologies
- Collaborated with peers on innovative projects utilizing Microsoft tools
- Expanded knowledge in Al, cloud computing, and software development through hands-on activities

NLP Intern - AI/ML 07/2025 – 08/2025
Elevvo Pathway Remote
An AI/ML company focusing on innovative technological solutions
- Implemented multiple NLP projects using Python and OOP
- Developed Sentiment Analysis and News Classification models with evaluation and visualization
- Applied Named Entity Recognition (NER) using both rule-based and model-based approaches (spaCy, Transformers)
- Strengthened skills in text preprocessing, embeddings, and model evaluation
- Gained hands-on experience with Transformers (Hugging Face) for advanced NLP tasks

EDUCATION

Bachelor's Degree in Computer Science & Artificial Intelligence 09/2023 – 06/2027
Arab Open University Cairo, Egypt

SKILLS

Programming
Python (OOP), Data Structures & Algorithms

Machine Learning & Deep Learning
PyTorch, TensorFlow, Scikit-learn, CNNs, RNNS, LSTM, Transformers

MLOps & Deployment
Docker, Docker Compose, FastAPI, MLflow, GitHub Actions (CI/CD), REST APIS

LLMS & Generative AI
RAG, LangChain, LangGraph, FAISS, Prompt Engineering

Computer Vision
YOLOv8, Object Detection, Image Classification, Segmentation

NLP
Transformers, Embeddings, Text Processing, spaCy, Sentiment Analysis

PROJECTS

End-to-End Al Predictive Maintenance System (Production-Oriented)
- Designed and deployed a full Al pipeline for Remaining Useful Life (RUL) prediction using LSTM (PyTorch), achieving 44% MAE reduction.

- Built a RAG-based diagnostic assistant with LangGraph and FAISS for context-aware insights.
- Developed REST APIs using FastAPI for real-time inference and integrated MLflow for experiment tracking and monitoring.
- Containerized the system with Docker Compose for scalable deployment.

YOLOV8 Vehicle & License Plate Detection System
- Developed a real-time object detection system using YOLOv8 for vehicles and license plates.
- Trained on a custom COCO-format dataset and optimized for real-world traffic scenarios.
- Achieved high detection accuracy under various lighting and occlusion conditions.

MRI Brain Tumor Segmentation
- Built a U-Net-based deep learning model using PyTorch for medical image segmentation.
- Performed data preprocessing, augmentation, and fine-tuning to improve model generalization.
- Achieved accurate segmentation with lou and Dice Score evaluation metrics, highlighting tumor regions reliably.

Blood Cell Classification using Computer Vision
- Developed a deep learning model using "ResNet, EfficientNet, and VGG16" for blood cell classification.
- Implemented preprocessing, augmentation, and fine-tuning to maximize accuracy.
- Integrated the model into a "Q15-based GUI" for interactive use and testing.

Arabic-English Machine Translation System
- Developed a Transformer-based neural machine translation model for bilingual translation.
- Implemented attention mechanisms for improved translation accuracy on Arabic-English datasets.

Ninja AI-LLM Chatbot
- Built an LLM-based chatbot assistant to guide students in exploring computer science domains.
- Designed conversational flows and integrated knowledge-based responses for precise guidance.