Omar Ayoub

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Summary

NLP Engineer with a passion for deploying practical, real-world AI solutions. Skilled in full-stack NLP pipelines, chatbots, and Transformer-based systems using tools like Hugging Face, FastAPI, Streamlit, and Firebase. Delivered AI products that enhance user interaction, automate insights, and improve prediction accuracy. Fluent in both English and Arabic, with experience in multi-disciplinary teams and leading student projects. Always pushing for innovation, clarity, and impact in language-focused AI.

Education

2019 – 2023
Cairo, Egypt

Bachelor of Computer Science
MTI University
- Machine Learning, Statistical Analysis, Data Structures, Cloud ComputingLed final-year project on intelligent database systems and collaborative team-based software development.

Professional Experience

08/2023 – 01/2025
Abu Dhabi, UAE

NLP Engineer Intern
- Developed and deployed deep learning NLP models that improved behavior prediction accuracy by **60%**, powering recommendation systems for marketing teams.
- Built 3+ production-ready pipelines for sentiment analysis, feedback classification, and customer engagement tracking using **PyTorch, Hugging Face, and Transformers**
- Integrated models with frontends via **FastAPI** and deployed internal tools
- Applied data augmentation and tuning (learning rate schedulers, batch optimizers), reducing training time by 10% while preserving accuracy.
- Processed large-scale text datasets (1TB+) and built ETL pipelines for highthroughput preprocessing.
- Collaborated with cross-functional teams to operationalize models in live systems.

Projects

Gemini-Powered RAG Chatbot
Academic Project
- Built an AI chatbot using **Google Gemini API** and **LangChain RAG pipeline**, delivering accurate, real-time answers based on document retrieval.
- Integrated **Firebase** for authentication and real-time logs.

- Optimized Gemini prompts using PEFT-based methods to reduce latency and increase response relevance.
- Used **FAISS** indexing and document chunking to ensure fast vector-based retrieval.
- Delivered the chatbot to small businesses for use in customer service and internal FAQs.

User Behavior Prediction System
Academic Project
- Designed a prediction model using **Transformer architectures (BERT-based)** to classify user behavior, boosting accuracy by 60%.
- Trained with **Hugging Face Transformers** and deployed via **FastAPI** for integration with dashboards.
- Evaluated model with detailed metrics (F1-score, ROC-AUC), applying **LoRA fine-tuning** for efficiency.

Customer Feedback Analyzer
- Built a full NLP pipeline that cleaned, labeled, and analyzed customer sentiment across surveys and social media inputs.
- Reduced feedback processing time by **20%**, increasing insights extracted per week by 25%.
- Visualization using **Matplotlib** and **Tableau** for management-level dashboards.

Skills

Programming & Data
Python (Advanced), SQL (Intermediate) Pandas, NumPy, Scikit-learn, Matplotlib

NLP & Deep Learning
Transformers (BERT, LLaMA, Gemma) Fine-tuning (LoRA, PEFT), Embeddings, Text Classification, Tokenization Libraries: Hugging Face, LangChain, OpenAI, Gemini Prompt Engineering, Retrieval-Augmented Generation (RAG) Chatbots (FastAPI, Streamlit, Firebase)

Deployment & Tools
- Streamlit, FastAPI, Firebase, GitCloud-based storage & processing Basic Docker, GitHub actions

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Languages

Arabic
Native (my mother tongue)

English
B2 (Upper Intermediate)