

# Youssef Magdy

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## EDUCATION

### German University in Cairo

*B.Sc. in Computer Engineering — GPA: 1.46 (German Scale, equiv. A-)*

Cairo, Egypt

Aug. 2021 – Present

## EXPERIENCE

### Junior Teaching Assistant — Data Structures & Algorithms

Sep 2024 – Dec 2024

*German University in Cairo*

*Cairo, Egypt*

- Mentored 50+ students in problem-solving sessions
- Assisted in solving assignments and providing constructive feedback on algorithmic implementations

### Software Developer Intern

Oct 2023 – Nov 2023

*Hotel Am Borsigturm*

*Berlin, Germany*

- Developed a responsive frontend website using HTML5 and Tailwind CSS
- Built an automated PDF generator that reduced manual document creation time by 80%

### Technical Support Intern

Jul 2024 – Aug 2024

*Orange Business*

*Cairo, Egypt*

- Resolved Real client support tickets for enterprise cloud and network security products
- Gained hands-on experience with AWS Cloud Architecture, IAM policies, and network security protocols

## PROJECTS

### Poetry Text Generator | *PyTorch, Transformer Architecture, Deep Learning, NLP*

- Made a 'Youtube' playlist explaining Neural Networks' concepts from Differentiation until Attention
- Designed and implemented a GPT-2-style Transformer model from scratch based on "Attention is All You Need"
- Implemented token and positional embeddings with Multi-Head Self-Attention and residual connections
- Trained on Arabic Poetry corpus achieving coherent text generation with perplexity under 30

### Graph-RAG E-Commerce Chatbot | *Python, Neo4j, LangChain, Streamlit, HuggingFace*

- Built an intelligent product search assistant integrating Knowledge Graphs with Large Language Models
- Implemented hybrid retrieval: entity extraction with Cypher queries and embedding-based similarity search
- Achieved 85% query accuracy improvement over traditional keyword-based search

### Teer Enta — Travel Platform | *MongoDB, Express.js, React.js, Node.js, REST APIs*

- Developed a full-stack MERN travel platform with personalized recommendations and smart budgeting
- Implemented JWT authentication, booking management, and integrated third-party payment APIs

### Real-Time Face Detection & Tracking System | *Python, OpenCV, YOLO, face\_recognition*

- Built a real-time face detection system capable of tracking distinct identities across video streams

### Loan Default Prediction Pipeline | *Python, SBERT, K-Means, Scikit-learn, Power BI*

- Built an end-to-end ML pipeline for predicting loan defaults using LendingClub data (2007–2018)
- Applied SBERT embeddings and K-Means clustering for text feature engineering on loan descriptions
- Created interactive Power BI dashboards for stakeholder reporting and model interpretability

## TECHNICAL SKILLS

**Languages:** Python, Java, C, C++, C#, JavaScript, TypeScript

**AI / ML:** PyTorch, TensorFlow, Scikit-learn, LangChain, RAG, Vector Databases (Pinecone, FAISS), Computer Vision, NLP

**Backend:** Node.js, FastAPI, ASP.NET, REST APIs, Microservices, JWT Authentication

**Databases:** PostgreSQL, MongoDB, Neo4j, SQL, NoSQL

**Cloud & DevOps:** AWS (EC2, S3, IAM), Docker, Git, CI/CD

**Core Concepts:** Data Structures, Algorithms, OOP, System Design, Distributed Systems

**Focus Areas:** Data Engineering, ML Engineering, Computer Vision, Object Detection, AI Systems Engineering

## LANGUAGES

**German:** Fluent (C1) | **English:** Fluent (C1)