

Belal Mounir Abdelshafi

Data Scientist & Machine Learning Engineer

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Passionate Computer Engineering graduate specializing in AI, data science, and machine learning, with strong Python development skills. Experienced in delivering AI solutions, with a foundation in computer vision and NLP. Recognized for excellence, leadership, and a commitment to high-impact results.

Work Experience

AI Engineer

Oct 2024 - Present

Mega Dev | Tanta, Egypt

Intelligent AI Agent

- Built an advanced chatbot integrating PostgreSQL, fuzzy search, and Groq LLaMA API for personalized assistance, efficient query handling, and seamless user interactions.
- Designed a framework supporting dynamic user authentication, SQL query generation, product recommendations, and natural language processing via APIs like Tavily and Groq.

Arabica Call Centre Insights

- Implemented noise-reduced transcription using WhisperV3 and Wav2Vec, paired with AI-driven sales call evaluation and customer interaction insights using models like LLaMA 3.3 70b .
- Delivered actionable summaries, interactive chat features, and enhanced sales strategies through an end-to-end AI-powered system.

Python Developer

Sep 2024 - Present

Mega Dev | Tanta, Egypt

Inventory Management System

- Built a FastAPI backend for processing and standardizing inventory data.
- Developed secure APIs for uploading product sheets and automated product matching.
- Enabled price and discount comparisons across suppliers using fuzzy logic.

ERP Accounting Module

- Created a Flask-based module to manage invoices, transactions, and financial records.
- Implemented CRUD operations for accounts and entries with structured validation and logging.
- Designed a scalable database to support comprehensive financial tracking.

Trainee

Aug 2023 - Sep 2023

GUPCO | Maadi

- Gained practical experience in full-stack web development and application administration.
- Developed skills in OS management and help desk support, enhancing troubleshooting capabilities.
- Contributed to GUPCO's dynamic IT environment, demonstrating adaptability and a commitment.

Trainee

Jul 2023 - Aug 2023

MCIT | Smart Village

- Selected for MCIT's competitive summer training in infrastructure, cybersecurity, and networking.
- Acquired hands-on experience in data center management, VoIP, and wireless networking.
- Built IT management skills working with industry experts in a professional setting.

- Completed training at Tanta University, enhancing problem-solving and analytical skills.
- Strengthened critical thinking for practical engineering applications.

Projects

MedixAI (AI based Healthcare system)

Oct 2023 - Jun 2024

Full Mark (Best Graduation Project)

- Symptoms Diagnosis: Built an ensemble model achieving 97.5% accuracy for disease diagnosis.
- Diabetes Prediction: Fine-tuned Random Forest and XGBoost, achieving 99% accuracy.
- Heart Failure Prediction: Implemented KNN with a 91% accuracy rate.
- Optometry Acuity Test: Developed real-time video processing for optometry with OpenCV and FastAPI.
- AI Chatbot: Integrated LLAMA 3 chatbot for real-time, advanced conversational support.
- Developed high-accuracy diagnostic models for pneumonia detection using MobileNetV1 and improved brain tumor and skin cancer detection with VGG16, DenseNet201, and deep learning models.

Customer Churn Analysis & Prediction Project

Oct 2024 - Oct 2024

- Data Preparation: Applied label encoding and SMOTEENN to handle class imbalance.
- Feature Engineering: Standardized data and used chi-square tests for correlation insights.
- Model Development: Optimized XGBoost, Random Forest, and SVC models, achieving 96% accuracy.

Face Recognition (DIP) Project

May 2022 - May 2022

- Developed face recognition system using KNN and PCA algorithms, achieving 97.5% accuracy.

AI Employees Management System

Oct 2024 - Nov 2024

- Utilized LLM models for generating contextual Arabic content and employee, company, and attendance management with streamlined report generation.
- Developed multiple report types, including work logs, attendance, and employment documents, supported by SQLite3 for data handling and automated PDF generation.

Core Skills

Python, SQL, Data Science, Git, Machine Learning, Natural Language Processing, Computer Vision, End-to-End Model Deployment, Leadership, Problem-Solving, Data Analysis, Effective Communication

Education

DEPI (MCIT)

May 2024 - Nov 2024

Diploma in Data Science and Machine Learning

Faculty of Engineering Tanta University

Oct 2019 - Jul 2024

Bachelor of Computer Engineering and Automatic Control