

Nada Ragab

Data Scientist | Machine Learning Engineer

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SUMMARY

Data Scientist with hands-on experience in building end-to-end machine learning systems and deploying production-ready AI solutions. Experienced in Python, SQL, Machine Learning, and Deep Learning, with hands-on expertise in data preprocessing, feature engineering, model evaluation, and deployment using FastAPI and MLflow. Passionate about developing scalable, data-driven AI solutions that solve real-world business problems across healthcare, finance, and computer vision.

EXPERIENCE

Data Science Trainee
Digital Egypt Pioneers Initiative (DEPI) | November 2024 – May 2025

- Completed intensive training in Data Science, Machine Learning, and Data Analysis.
- Worked with real-world datasets using Python, Pandas, NumPy, Matplotlib, and Seaborn.
- Performed Exploratory Data Analysis (EDA), feature engineering, and predictive modeling.
- Built end-to-end machine learning projects from data preprocessing to deployment.
- Collaborated on real-world AI projects following industry best practices.

Data Analyst & Python Programming Intern
Faculty of Computers and Artificial Intelligence, Benha University | September 2022 – March 2023

- Developed Python-based data analysis solutions for academic research.
- Performed data cleaning, preprocessing, and transformation using Pandas and NumPy.
- Created visualizations to support data-driven decision-making.
- Improved workflow efficiency by automating repetitive data processing tasks.
- Collaborated with research teams on data analysis projects.

EDUCATION

Bachelor of Computers and Artificial Intelligence
Benha University, Faculty of Computers and Artificial Intelligence
Department of Scientific Computing (SC) | Graduation: June 2023
GPA: 2.86/4.0

- Graduation Project:** Real-time Driver Drowsiness Detection System using Convolutional Neural Networks (CNNs), achieving an A+ grade for developing a computer vision-based safety solution.
- Relevant Coursework:** Machine Learning, Artificial Intelligence, Data Structures, Scientific Computing, Data Analysis, and Computer Vision.

SKILLS

Technical Skills:

- Programming Languages:** Python, SQL
- Data Analysis:** Pandas, NumPy, SciPy, Data Cleaning, Data Wrangling, Exploratory Data Analysis (EDA), Statistics
- Data Visualization:** Matplotlib, Seaborn, Plotly, Dash, Power BI
- Machine Learning:** Scikit-learn, Classification, Regression, Predictive Modeling, Feature Engineering, Model Evaluation, Cross-Validation, Hyperparameter Tuning
- Deep Learning:** TensorFlow, Keras, Convolutional Neural Networks (CNNs)
- Computer Vision:** OpenCV, OCR, Image Classification
- Development Tools:** Jupyter Notebook, Google Colab, VS Code
- Web Scraping:** BeautifulSoup, Selenium
- API Development & Deployment:** FastAPI, Swagger UI
- Version Control:** Git, GitHub

Soft Skills:

- Research, Communication, Teamwork, Problem-Solving, Leadership, Time Management, Attention to Detail

PROJECTS

Bank Marketing Subscription | June 2026 | [GitHub Repository](#)

- Built an end-to-end machine learning pipeline using 11,162 customer records and 16 features to predict customer subscription to term deposits.
- Compared 3 classification models (Logistic Regression, Random Forest, and XGBoost).
- Performed Exploratory Data Analysis (EDA), feature engineering, and data preprocessing.
- Applied hyperparameter tuning and cross-validation.
- Achieved 72.9% Accuracy and 0.783 ROC-AUC.
- Improved customer targeting using predictive analytics.

Key Technologies: Python, Scikit-learn, XGBoost.

Diabetic Patient Readmission Prediction (DEPI) | May 2025 | [GitHub Repository](#)

- Built an end-to-end machine learning system for hospital readmission prediction.
- Performed data preprocessing, feature engineering, and class imbalance handling using SMOTE and SMOTE-Tomek.
- Evaluated 7 machine learning models and tracked experiments using MLflow.
- Developed prediction APIs using FastAPI and built dashboards with Streamlit and Plotly.
- Achieved 88.7% Accuracy and 0.94 ROC-AUC using XGBoost.

Key Technologies: Python, FastAPI, MLflow, Streamlit, Scikit-learn, XGBoost.

Bank Statement Analysis System | March 2025 | [GitHub Repository](#)

- Built an OCR pipeline to extract financial transactions from PDF bank statements.
- Developed a machine learning model for automatic transaction classification.
- Built a FastAPI backend for structured JSON output.
- Implemented a feedback-based learning mechanism for continuous model improvement.
- Improved the efficiency of financial transaction processing through automation.

Key Technologies: Python, FastAPI, OCR, Scikit-learn.

Driver Drowsiness Detection System | Graduation Project | June 2023

- Developed a real-time driver drowsiness detection system using a modified VGG16-based Convolutional Neural Network (CNN).
- Built a computer vision pipeline for face and eye detection using OpenCV Haar Cascade classifiers and real-time video processing.
- Achieved 98.59% validation accuracy on a driver drowsiness dataset by applying transfer learning and regularization techniques.
- Implemented an alarm mechanism that triggers when consecutive closed-eye frames exceed a predefined threshold, helping prevent fatigue-related accidents.
- Trained and evaluated the model using TensorFlow/Keras and optimized performance for real-time inference.

Key Technologies: Python, OpenCV, TensorFlow, Keras, CNN, VGG16, Computer Vision, Deep Learning.

CERTIFICATIONS & TRAINING

- **Digital Egypt Pioneers Initiative (DEPI) | Data Science Track | May 2025**
Comprehensive training program in **data science**, focusing on advanced programming, machine learning, data analysis, and professional skills development.
- **Power BI Course | Self-paced Training | June 2025**
Developed interactive dashboards and data visualizations using Power BI.
- **Python Programming Certificate | Benha University | September 2022**
- **Soft Skills Training Course | Focused on communication, teamwork, and leadership | September 2024**

LANGUAGES

- **Arabic:** Native
- **English:** Intermediate (B1–B2)