

Karim Taha Metwaly

Machine Learning/AI Engineer

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📍 Nasr City, Cairo

🛡 Exempted



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📄 Summary

Mechatronics Engineer transitioning to ML/AI, combining engineering expertise with programming skills to develop innovative solutions in the rapidly evolving field of artificial intelligence.

👛 Professional Experience

Machine Learning for Data Analysis, NTI

11/2024 – present

Benha

- Develop Skills in Data Preprocessing and Exploration.
- Apply Machine Learning to Real-World Data Analysis.
- Gain Proficiency in Machine Learning Tools and Libraries.
- Enhance Problem-Solving and Analytical Thinking.

AI Trainee – Huawei Egyptian Talents Academy, NTI

09/2024

Nasr city, Cairo

- Mastered Python programming for AI applications.
- Gained expertise in data analysis, machine learning, and deep learning.
- Developed skills in optimizing AI models for performance and accuracy.
- Worked on CV projects applying AI and deep learning algorithms.

🧩 Technical Skills

Strong foundation in Python

Familiarity with data manipulation libraries and web scraping — (Pandas, NumPy), (BeautifulSoup)

Deep Learning concepts and architectures — (CNNs, RNNs)

Familiarity with containerization tools — (Docker)

Familiarity with ML algorithms

Knowledge of database management systems — (MySQL, PostgreSQL)

📁 Projects

Home Credit Default Risk Prediction, (Kaggle Competition)

- Developed machine learning models to predict credit default risk, achieving 0.7676 AUC score using LightGBM
- Implemented comprehensive feature engineering including financial ratios and standardization techniques
- Created robust data preprocessing pipeline handling missing values, outliers, and categorical encoding
- Evaluated model performance using cross-validation and compared multiple algorithms (LightGBM, XGBoost, Logistic Regression)
- Technologies: Python, LightGBM, XGBoost, Scikit-learn, Pandas

ResNet50 Image Classification, (CIFAR-10 Dataset)

- Implemented deep learning model using ResNet50 architecture, achieving 94.66% test accuracy
- Developed comprehensive preprocessing pipeline for image data extraction and normalization
- Optimized model architecture with custom layers including BatchNormalization and Dropout

- Applied transfer learning techniques using pretrained ResNet50 model
- Technologies: Python, TensorFlow, ResNet50, NumPy, Keras

Education

Bachelor's degree in Mechatronics & Robotics Engineering,

09/2016 – 02/2022

Egyptian Russian university

Badr City, Cairo

- **CGPA:** 2.28

Graduation project:

- Design and Development of CNC Programming and Machining.
- Project grade: A

Certificates

- AI Career Essentials (ALX)

Languages

Arabic — Native/Bilingual

English — Proficient