Ahmed Harfoush

AI Engineer | Deep Learning Specialist

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Summary

Aspiring Engineer specialized in Deep Learning neural networks and Machine Learning pipelines. Passionate about designing scalable AI architectures and bridging the gap between theoretical algorithms and practical application. Possess a strong foundation in **applied mathematics** and data interpretation, capable of delivering optimized models for complex problem-solving. Dedicated to leveraging cutting-edge AI technologies to drive innovation in automation and predictive analytics.

Key Skills & Expertise

- **Machine Learning:** Scikit-learn, Regression, Classification, Clustering, XGBoost, Random Forest, Decision Trees
- **Deep Learning:** CNNs, RNNs, Transformers, Transfer Learning, Model Optimization
- **Frameworks:** Huawei MindSpore, TensorFlow, PyTorch
- **Mathematics:** Applied Math, Algorithm Design, Statistics, Linear Algebra
- **Data Eng:** Pipelines, Visualization, EDA, SQL
- **Programming:** Python (Pandas, NumPy), Bash
- **Tools:** Docker, Git, VS Code, Jupyter, Colab

Accomplishments & Key Projects

Ailo – Emotion-Adaptive AI System *Huawei MindSpore, Python*

- Engineered an intelligent system for autism support using **Huawei MindSpore** to analyze behavioral patterns.
- Implemented complex **algorithms** to infer emotional states (stress, hesitation) without explicit user inputs.
- Designed a dynamic feedback loop utilizing **applied mathematics** to normalize sensor data and adjust system difficulty in real-time.

Flood Prediction Hazard Simulation System *Python, Flask*

- Developed a backend system to simulate and predict flood hazards by processing environmental data streams.
- Constructed **machine learning pipelines** to ingest rainfall and flow-rate data, forecasting water levels with high accuracy.
- Integrated **data visualization** techniques to map numerical risk factors into actionable hazard alerts.

Cancer Detection via Deep Learning *TensorFlow, CNNs*

- Designed and trained a Convolutional Neural Network (CNN) for medical imaging, achieving **92% validation accuracy**.
- Performed rigorous hyperparameter tuning and data augmentation to prevent overfitting and improve generalization.

Face Recognition Security System *OpenCV, Python*

- Built a facial recognition pipeline achieving **94% accuracy**, reducing manual attendance tracking time by 90%.

Work Experience

Machine Learning Engineer Trainee *Jul 2025 – Sep 2025*
National Telecommunication Institute (NTI) *Cairo, Egypt*

- Engineered automated pipelines to clean 50,000+ raw records, achieving a **30% reduction** in data preparation time.

- Developed a final capstone project, scoring **98%** by effectively applying **business rules** to technical constraints.
- Conducted statistical analysis on training datasets to identify bias and ensure model fairness.

Data Analyst Intern (AI Focus) *May 2024 – Jul 2024*
CIB Egypt *Cairo, Egypt*

- Applied **analytical skills** to process 500,000+ transaction records, developing algorithms to detect fraud patterns.
- Lowered false positive rates by **12%** through optimized data interpretation.
- Reduced reporting time by **92%** (from 3 days to 2 hours) using automated **data visualization** dashboards.

AI Engineer Trainee *Mar 2024 – Apr 2024*
Huawei ICT Academy *Remote*

- Developed anomaly detection models for system logs, identifying 95% of critical errors in test datasets.
- Optimized models for deployment on edge devices with limited computational resources.

Certifications

- **AWS Educate Machine Learning Foundations** – Amazon Web Services (2025)
- **Getting Started with Deep Learning** – NVIDIA
- **Google Analytics Certification** – Google Digital Academy

Education

Bachelor of Computer Science (AI Major) *Expected 2027*
Al-Riyada University of Science and Technology

- My grade is **Excellent** in all previous academic years.
- Relevant Coursework: Neural Networks, Machine Learning, Data Mining, Analysis of Algorithms, Calculus.