

Mohamed Ahmed

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AI & Data Specialist with expertise in machine learning, deep learning, and cloud-based data engineering. Assistant Lecturer at ECU, teaching Deep Learning, Algorithms, and Data Mining, while mentoring students in AI applications. Skilled in Python, SQL, TensorFlow, and Big Data, with hands-on experience developing scalable AI solutions that optimize operations and drive business transformation. Passionate about leveraging AI and analytics for real-world impact.

Experience

2024 – Present

Assistant Lecturer | Egyptian Chinese University (ECU), Faculty of Engineering and Technology

- **Selected Topics: Deep Learning & Neural Networks** – Covers neural network architectures, backpropagation, deep learning frameworks (TensorFlow, PyTorch), and real-world AI applications.
- **Design and Analysis of Algorithms** – Focuses on problem-solving techniques, sorting algorithms, graph algorithms, complexity analysis, and optimization.
- **Data Mining** – Explores data preprocessing, clustering, classification, association rule learning, and real-world applications.

Responsibilities:

- Deliver **lectures and hands-on tutorials** on key AI, data science, and algorithmic concepts.
- Guide students in **implementing practical coding exercises and research projects**.
- Provide career mentoring in **AI, data science, and software engineering**.

2021 – 2023

Aircraft Maintenance Engineer | Egyptair

- Optimized aircraft maintenance operations by implementing data-driven programs, ensuring regulatory compliance, improving system monitoring, and achieving a 15% increase in efficiency while reducing downtime through predictive maintenance insights.

2020 – 2021

Assistant Site Manager | Meamar Group for Construction and Development

- Collaborated with clients to evaluate project designs, propose remodelling strategies, and align decisions with budget constraints—effectively acting in a consulting capacity to improve outcomes and reduce costs by 10%.

Education

2023 – 2024

MSc AI and Applications | Strathclyde University, Glasgow, Scotland

- Achieved high distinctions in Data Science, Predictive Modelling, and Statistical Analysis.

- **Dissertation: Enhancing Marketing Strategies through Customer Segmentation** – utilized machine learning techniques to identify customer clusters, improving targeted campaign efficiency.
- **Projects:**
 - **Portfolio Optimization:** Applied predictive models to financial datasets, achieving a 20% improvement in risk-adjusted returns.
 - **Trading Rules Formulation:** Developed algorithms to identify profitable trading signals.
 - **Customer Segmentation:** Integrated machine learning and computer vision to analyse customer data and segment users based on behaviour and emotional responses.

2015 – 2019

BSc Aerospace Engineering | University of the west of England, Bristol, United Kingdom

Career Development

Real-Time Computer Vision for Anomaly Detection | Personal Project (2023)

- Developed a computer vision system for identifying anomalies in mechanical parts (such as aircraft components) using image data.

Technologies: OpenCV, Python, TensorFlow

Outcome: Successfully implemented object detection algorithms, identifying faulty parts with an accuracy of 85%, contributing to predictive maintenance solutions.

Image Recognition for Stock Market Trends | Personal Project (2023)

- Applied computer vision techniques to analyse historical stock market charts using OpenCV to detect key patterns and trends that inform trading decisions.

Customer Segmentation with Image Data | Academic Project (2023)

- Integrated computer vision with machine learning models to analyse visual data in customer segmentation projects, utilizing facial recognition techniques to segment customers based on emotional responses to products in marketing campaigns.

Technical Skills

- **Programming Languages:** Python (Advanced), SQL, R, Java, C++
- **Machine Learning & AI:** TensorFlow, PyTorch, OpenCV, NLP techniques, predictive modelling
- **Data Engineering & ETL Tools:** Proficient in Azure Data Factory, Airflow, and Informatica for building scalable ETL pipelines and workflows.
- **Big Data & Cloud Platforms:** Skilled in managing Apache Spark, Hadoop, and Databricks environments. Proficient in Azure, AWS, and GCP for data engineering and machine learning workflows.
- **Data Visualization:** Power BI, Tableau, Matplotlib, pandas, NumPy
- **DevOps Practices:** Understanding of Git workflows, CI/CD pipelines, and tools like Jenkins and Azure DevOps.
- **Data Governance:** Familiar with frameworks for data quality standards and metadata management frameworks.