

Mostafa Hamada Hassan Ahmed

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Professional Summary

Passionate about AI and Data Science with hands-on experience in ML model develop, data analysis, and MLOps. Skilled in computer vision, NLP, and scalable deployment. Aiming to leverage technical skills to contribute to impactful, data-driven solutions.

Education

Bachelor of Science in Computer and Systems Engineering Ain Shams University

Expected Graduation: June 2026

Cumulative GPA: 3.0 / 4.0

Experience & Internships

- **Data Science Trainee**, DEPI (Digital Egypt Pioneers Initiative) Dec. 2025 – June 2026
 - Selected for the professional Data Science track under the Ministry of Communications and Information Technology (MCIT).
 - Mastered the end-to-end Data Science lifecycle: from data acquisition and SQL querying to model deployment and MLOps.
 - Utilizing MLflow and Hugging Face for model versioning and experimenting with advanced Deep Learning architectures.
- **Embedded System Essentials**, SIEMENS Jul. 2025 – Sept. 2025
 - Completed a comprehensive training program covering Bootloader, RTOS, AUTOSAR, SDLC, and communication protocols.
 - Gained hands-on experience through labs and assignments integrating embedded software theory into practice.
 - Strengthened skills in real-time and automotive embedded systems development.
- **AI Internship**, Samsung Innovation Campus (SIC) Jul. 2024 – Oct. 2024
 - Gained hands-on experience in designing and implementing AI models using machine learning and deep learning techniques.
 - Built and optimized predictive models for real-world applications, focusing on computer vision, natural language processing (NLP), and data analysis.
 - Collaborated with cross-functional teams to develop AI-based solutions, contributing to the AI development lifecycle from data preprocessing to model evaluation.
 - Worked with tools such as TensorFlow, Keras, and Python for AI/ML development, ensuring scalable and efficient model performance.
 - Conducted exploratory data analysis (EDA) and applied feature engineering techniques to improve model accuracy.
 - Presented project outcomes and technical reports to team leads, demonstrating strong communication and problem-solving skills.
- **AWS Public Cloud Summer Training**, National Telecommunication Institute (NTI) Aug. 2023 – Oct. 2023
 - Gained proficiency in AWS services, security, architecture, and cost optimization.
 - Learned Red Hat System Administration 9.0, covering file management, permissions, and task automation.
 - Improved soft skills such as communication, teamwork, and freelancing.

Projects

• **FlipFlow: Inventory & Transaction Management System**

Built using: Python • Django • SQLite/MySQL • REST API • Threading • Git

Developed a distributed e-commerce platform with inventory tracking, user profiles, transaction history, and analytics.

Led a team of 10 using agile methodology.

- Designed and implemented RESTful APIs using Django REST Framework.
- Built responsive frontend UI components using Bootstrap and jQuery.
- Implemented database replication logic using threading for fault tolerance.
- Integrated Chart.js for visualizing transaction trends and item popularity.
- Used Typst and Mermaid diagrams for documentation and planning visualization.
- Presented project architecture and time-plan using Gantt charts and timelines.

• **SteamMatch: Steam Video Games Recommendation System**

- Developed a content-based recommendation system for Steam video games using the Steam Video Games dataset.
- Utilized TF-IDF for the 'tags' column and Word2Vec for the 'description' column to extract relevant features.
- Implemented the recommendation model using machine learning techniques to suggest games based on user preferences.
- Worked with various tools including Python, scikit-learn, and TensorFlow for model building and performance optimization.

• **CPU Scheduler Simulator**

C++ • Qt Creator • OS Concepts • GUI Development

Built a GUI-based CPU scheduler simulator supporting FCFS, SJF, Round Robin, and Priority scheduling algorithms.

- Visualized execution flow using live-updating Gantt charts.
- Calculated performance metrics like Waiting Time, Turnaround Time, and average efficiency.
- Compared scheduling algorithms to demonstrate trade-offs between fairness and speed.
- Reinforced understanding of process management, scheduling policies, and real-time execution.

• **Employee Attrition Analysis for IBM**

Python • Pandas • Feature Engineering • Machine Learning

Analyzed HR dataset to identify factors influencing employee turnover and proposed data-driven retention strategies.

- Conducted exploratory data analysis (EDA) on a real-world IBM HR dataset containing 35 features.
- Engineered meaningful new features.
- Applied Robust Scaler to handle outliers and used clustering and classification techniques.
- Built and evaluated multiple machine learning models using resampling techniques (e.g., SMOTE) due to class imbalance.
- Delivered actionable insights to help HR teams understand and mitigate employee turnover risks.

• **Advanced XML Editor and Social Network Analysis GUI**

- Designed a multi-functional XML editor with advanced features like verification, formatting, minification, JSON conversion, and data compression.

- Integrated a GUI using Python (tkinter and ttkbootstrap) for user-friendly file management and XML operation execution.

- Developed graph-based operations for social network analysis, such as finding influencers, mutual followers, and drawing graphs.

- Utilized C++ for backend processing and Python for frontend interaction, ensuring modular and scalable software architecture.

Technical Skills

- **Programming Languages:** C++, Python, Java, Embedded C, SQL, ARM Assembly
 - **Data Science & ML Tools:** Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, TensorFlow/Keras (basic)
 - **Web Development:** HTML5, CSS3, Bootstrap, Django
 - **Other Skills:** OOP, EDA, GUI Development, Software Optimization, GUI Development
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Languages

- **Arabic:** Native
- **English:** B1 (CEFR)

Interests & Activities

- **Sports:** Padel, Swimming
 - **Skills:** Presentation, Team Collaboration, Problem Solving
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References

Available Upon request