

Mohamed Mahmoud Abdelhamid

Backend Software Engineer | AI Engineer



Cairo, Egypt



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Google Scholar

Professional Summary

Backend Software Engineer with strong foundation in Machine Learning and Deep Learning. Experienced in building scalable web systems using Django and developing end-to-end AI solutions including model deployment and data-driven applications. Seeking to transition into AI/ML-focused roles combining software engineering and intelligent systems.

Professional Experience

Backend Software Engineer

Software House Solutions Co | Cairo, Egypt | Jan 2026 - Present

- Contributing to the development and maintenance of multiple production-grade ERP E-Jewelry systems built with Django ,serving retail shops, jewelry factories, and gemstone businesses
- Designed and implemented backend modules for inventory tracking and invoice generation & printing
- Resolved production issues and feature requests tracked via Jira, improving system reliability and user satisfaction
- Participated in feature testing, debugging, and deployment to production servers

Freelancer Data Scientist

Upwork | Remote | Mar 2023 – Dec 2025

- Delivered end-to-end AI & Data science projects including image/text classification, model deployment (Flask/FastAPI), and interactive dashboards (Dash, Plotly)
- Collaborated with international clients to solve business problems using predictive analytics and automation

Data science intern

Machinfy | Cairo, Egypt | Jul 2022 – Sep 2022

- Built a web crawler for automated job data extraction and processing using Selenium and BeautifulSoup
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Key Projects

EEG-Based Hand Movement Recognition (Graduation Project – A+)

- An Intelligent system used to recognize hand movements using EEG Signals and classify 6 different hand movements (Forward , Backward, Left, Right, Up, Down) for both the real movement and the imagery movement (Motor imagery)
- Developed with: Preprocessing (Segmentation , Normalization, Artifact Removal) , Feature Extraction (Discrete Wavelet Transform, Common Spatial Pattern , Statistical Features) and Classifiers (CNN, LSTM ,EEG-NET)
- Presented a [Paper](#) titled “Recognizing Hand Movements using EEG-Signal Classification” at the 11th IEEE Conference ICICIS 2023 ; which overcame the results from literature review on the same dataset

POS & Named Entity Recognition Tagger Application

- BI-LSTM-based multi-task NLP sequence model to perform both Part-of-Speech tagging and Named Entity Recognition with 95%
- Implemented with TensorFlow, Python, and deployed via Streamlit Cloud , providing interactive visualization of NER

Egyptian Car Plate Detection and Recognition System

- Achieved 93% mAP for Egyptian vehicle plate detection using YOLOv5 on a custom dataset.
- Integrated DeepSORT for vehicle tracking and EasyOCR/PyTesseract for Arabic-English plate text extraction.
- Tools: OpenCV, YOLOv5, DeepSORT, EasyOCR, PyTesseract

Taxi Service Prediction (3rd Place – ML Competition)

- Predicted taxi prices with a score of 95% using Poly-Regression and ride categories with a score of 90% using Random Forest
- Developed with: Pandas, Matplotlib, Seaborn, AdaBoost and Random Forest Algorithms

Customer Segmentation

- The objective of this project is to identify segments of the population that form the core customer base for a mail-order sales company in Germany
- Developed with: pandas, matplotlib, seaborn, scikit-learn and K-means algorithm

TECHNICAL SKILLS

- **Programming languages:** Python, C++, Java
- **AI Frameworks:** Scikit-learn, TensorFlow, Keras, PyTorch, NLTK, OpenCV
- **Data Analysis & Visualization:** Pandas, NumPy, Matplotlib, Seaborn, Plotly, Dash, Tableau
- **Web & Automation:** Flask, FastAPI, Django, RESTful API, HTML, CSS, BeautifulSoup, Selenium
- **Databases:** SQL, PostgreSQL
- **Other Tools:** Docker, Git, GitHub

Education

Bachelor of Computer Science

Ain Shams University – Faculty of Computer and Information Sciences

Cairo, Egypt | Sep 2019 – July 2023

- GPA: 2.9
- Relevant Coursework: Machine Learning, Deep Learning, Computer Vision, NLP, AI, DSP, Linear Algebra, Statistics, OOP, Algorithms

Certifications & Courses

- Generative AI with AWS
- Deep Learning Specialization by DeepLearning.AI
- Machine Learning with TensorFlow Nanodegree Udacity (Bertelsmann Scholarship)
- Huawei HCIA-AI
- AWS Machine Learning foundations
- Machine Learning by Stanford University
- Applied Data Science – WorldQuant University

Extracurricular Activities

- Technical Member – Support Machine Learning Committee, FCIS Ain Shams University (2020–2022)

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- **Languages:** Arabic: Native, English: Professional (B1)
 - **Military service:** Completed