Menna Allah Reda

AI Engineer

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○ Menna Reda   in Menna Reda   ⚲ Cairo, Egypt

AI professional with a postgraduate diploma in Computer Science, currently pursuing a pre-master's program. Experienced in machine learning, deep learning, computer vision, and NLP, with hands-on experience in over 50 projects. Proficient in data analysis using Python and various tools, alongside expertise in statistical modeling. Passionate about leveraging AI to solve real-world problems and drive innovation.

Work Experience & Internships

1- *AI Engineer and python Developer*. AI stack company, (12/2023 : present)
- Led AI projects in machine learning, deep learning, NLP, and computer vision, focusing on OCR, image processing, data analysis, and chatbot development. Improved OCR accuracy through model training, applied machine learning for data extraction, and utilized NLP techniques and transformers for enhanced chatbot functionality.
- **Key Projects:**
    1. **Automated Invoice Data Extraction System**: Developed a system to extract invoice data using OCR techniques (PaddleOCR, PyTesseract, Google OCR API) with image enhancement and NLP methods for accurate data extraction, saving results into an ERP database or Excel sheet on a scalable VPS.
    2. **Identity ID Data Extraction System**: Created a system to extract data from identity cards and integrate it into the HR system, utilizing image processing for quality enhancement and NLP with transformers for accurate information extraction.
    3. **Document Signature Classification Model**: Built a deep learning model using TensorFlow, Keras, and OpenCV to classify signed and unsigned documents, leveraging image processing and data augmentation for higher accuracy.
    4. **Bilingual Customer Support Chatbot**: Developed a bilingual chatbot (Arabic and English) using NLP techniques to enhance response accuracy and improve the efficiency of handling customer queries.

2- *AI Engineer,* Freelancer, (2022: present)
- Worked on diverse freelance projects, developing custom machine learning models and AI solutions across NLP, computer vision, and data analysis, addressing varied client needs efficiently.

3- *Artificial intelligence intern*, codsoft company, 1 month, (25/10/2023: 25/11/2023)
- **completed practical projects:** image caption, chatbot generation, face recognition and book recommendation system.

4- *Data analytics consulting virtual intern*, Forage Company, 1 month, (9/2023: 10/2023)
- **completed practical tasks in**: Exploratory Data Analysis, Data Modeling, Model Building and Interpretation, Machine Learning Production, Quality Assurance

5- *Artificial intelligence job simulation intern*,   Forage Company, 1 month, (9/2023: 10/2023)
- **completed practical tasks in:** Data Quality Assessment, Data Insights, Data Insights and Presentation

6- *AI developer intern,   instant software company*, 2 months, (7/2023: 9/2023)
- I did with instant training for 2 months like 40 project in ML, DL by different algorithms, analysis, scraping, CV and NLP by libraries like pandas, numpy, tkinter, matplotlib, seaborn, scikit learn, openCV, NLTK and flask for deployment.

Education

1-present, Master in computer science (in AI minor), faculty of graduate studies for statistical research, Cairo University
- **Graduation project:** Survey on Intelligent Chatbots with implementation for different Chatbots using different ML and DL algorithms like SVM, LLM and GRU, grade (Excellent)

2-graduated 2023, Postgraduate Diploma in computer science, faculty of graduate studies for statistical research, Cairo University, GPA 3.58 (Excellent)
- **Graduation project:** deploy API convert any video or audio or image by Arabic and English to text and make summarization and spell correct on the extracted text and save it in txt file, grade (Excellent)

3-graduated 2020, Cairo university, grade (Good)

Research & Publications

1- *Intelligent Assistant Agents: Comparative Analysis of Chatbots through Diverse Methodologies*
Published in: Global Scientific Journals (GSJ), Vol. 12, Issue 10, Oct 2024,   **DOI:** 10.13140/RG.2.2.23344.57602
- Analyzed the evolution, applications, and challenges of chatbots, focusing on ML/DL techniques in both Arabic and English.
- Explored chatbot accuracy, intelligence, and emerging trends in AI research.

Projects

1- Machine Learning & Deep Learning projects:
- **Car Brand Detection:** Utilized transfer learning (ResNet50) and deployed using Flask.
- **Car Price Prediction:** Applied Ridge, Lasso, and Linear Regression models to predict car prices and identify the best model.
- **Disease Prediction System:** Developed a disease prediction model by DecisionTree, randomforest and NaiveBayes with a Tkinter-based user interface for easy interaction, (95%).

- **Customer Segmentation:** Performed hierarchical clustering on mall customers' data and applied Nearest Neighbors and K-Means for predictions.
- **Recommendation System:** Built a book recommendation system based on user preferences using KNN.
- **Emotion Detection:** Used CNN for emotion detection from facial images.
- **Handwritten Digit Recognition:** Implemented a CNN model for handwritten digit recognition, integrated with Tkinter for a GUI.
- **Skin Cancer Prediction:** Developed a CNN model for skin cancer detection based on medical image data, (78%).

2- Computer vision & NLP projects:
- **Drug Name Detection & Recommendation:** Built a system using YOLO to detect drug names from images and recommend related products powered by NLP.
- **Face & Emotion & Attendance Detection:** Implemented facial detection, emotion recognition and attendance tracking by OpenCV, Keras and Haar Cascades.
- **Human and Fish Tracking:** Developed a real-time object tracking system for human and fish movements.
- **Real-Time Object Detection:** Applied OpenCV to detect and track objects in real-time video streams.
- **Chat with Your PDF:** Created a chatbot to extract and interact with text from PDF documents using OpenAI LLM.
- **Hand Landmarks Detection:** Used Mediapipe for detecting hand landmarks in images and videos.
- **Twitter Sentiment Analysis:** Applied transformers for sentiment analysis of tweets.
- **Speech Recognition & Text-to-Speech:** Developed AI systems for speech recognition and converting text to speech.
- **Image Captioning:** Combined VGG16 for feature extraction and LSTM for generating captions from images.
- **Age & Gender Prediction:** Developed an OpenCV-based model for predicting age and gender from images.

3- Data Analysis & Data Science Projects (35 projects):
- **Data Analysis for different datasets:** Conducted analysis on sales, customer behavior, and operational datasets using tools like Pandas, Numpy, Matplotlib, and Seaborn.
- **Time Series & Real Data Analysis:** Performed real-time data analysis, including trend analysis and forecasting, on datasets from KPMG, African Development Bank, and others.

4- Web scraping projects:
- **IMDB Data Scraping:** Built a tool to collect information from IMDb pages using BeautifulSou and requests.

Courses & Certificates

1- One Million prompters, Dubai future foundation
2- AI engineering with IBM (NLP-Computer Vision-Keras-TensorFlow -Pytorch – ML– DL), Coursera
3- DL.AI tensorflow developer (ML&DL, NLP, Time Series), Coursera   10 - Agile scrum, Tera courses
4- Introduction in data engineering, Coursera   11- Data science and machine learning, Edraak
5- Linux commands and shell scripts, Coursera   12- Computer Vision, M3aarf
6- Data science with python, SkillUp   13- database fundamentals, Mahara-tech
7- AI diploma, instant software company   14- python programming language, Mahara-tech
8- data analysis (power BI), ministry of youth and sports and Microsoft   15- R programming language, M3aarf
9- Robotics programming (c & Arduino & sensors), smart technology   16- C++, Cairo University, (Good)

Skills

Technical skills:
AI (Pandas, Numpy, Matplotlib, Seaborn, Scikit-learn, OpenCV, SpaCy, NLTK, Transformers, Keras, TensorFlow, PyTorch)
Data Analysis & Visualization (Python, SQL, Power BI, Tableau, Excel, Google Data Studio)
Programming Languages (Python (OOP), C++ (OOP), C#, C, R, HTML, CSS)   Operating Systems (Windows, Linux)
Web Scraping & Automation (BeautifulSoup, Selenium)   Deployment (Flask, Streamlit, AWS EC2, VPS, FastAPI)
Version Control & Collaboration (Git, GitHub)   Other (Robotics, Arduino Programming, Shell Scripting)

Soft Skills: Communication Skills, Problem-Solving, Critical Thinking, Creativity, Collaboration, Leadership

Language skills: Arabic (Native),   English (IELTS: 6/B2),   Germany (Good),   Hebrew (Acceptable)

Extra curricular activitates

1- *Volunteer, HR Team and Team Head Leader*, Resala Charity Organization, (3 / 2019 : 10 / 2021)
- Volunteered for three years, with two years in the HR team and one year as the HR Team Head Leader.
- Enhanced leadership, teamwork, and organizational skills by managing a team and coordinating activities.
2- *Social Researcher for Public Service* , Social Affairs Department, (11/ 2020 : 10/ 2021)
- Conducted research to assist underprivileged individuals in securing financial aid for education, housing, and basic needs.
- Developed skills in multi-tasking, time management, and empathy through direct community interaction.