SARA HAMZA

Machine Learning Engineer

Email: sarasaadoun4@gmail.com
Phone: +201063928185
Address: Egypt

GitHub | **LinkedIn** | **Kaggle**

EDUCATION

Bachelor of Engineering, Tanta University *Sep 2019 – July 2024*
Major: Computer Engineering and Automatic Control
Grade: 94.8% | Ranked 1st in class

EXPERIENCE

Sparks Foundation Internship *Sep 2023 – Oct 2023*

- Utilized supervised learning to predict the student scores.
- Determined the optimal number of clusters using k-means clustering algorithm. Additionally, applied PCA for data visualization purposes and employed different evaluation methods to assess the performance.

PROJECTS

Wavely Graduation Project (Bidirectional Sign language translator)

- **Part 1: From Sign language videos to English text**
- Extracted key points from sign language videos in real-time using MediaPipe, classified them with an LSTM model, and utilized a large language model (LLM) with few-shot learning to generate grammatically correct sentences.
- **Part 2: From English Text into Sign language Videos**
- Converted 2,000 signing videos into abstract skeleton representations to maintain privacy and scalability of dataset.
- Processed input text to extract base words with grammar correction and lemmatization, then used a pre-trained all-MiniLM-L6-v2 model to create high-dimensional word embeddings and stored them in a FAISS index for efficient semantic search.

Chatbot: Chat with your resume - deployed using streamlit

- Built a conversational chatbot using LangChain and Google Generative AI with custom prompts that tracks chat history and extracts key information from resumes for effective analysis.

Malaria Detection from cell images

- Fine-tuned pre-trained deep learning models (VGG16, EfficientNetB3, ResNet50, MobileNetV2) for the binary classification of malaria-infected cells, achieving an accuracy of 96%.

Mysklearn python package

- Python package designed to mimic some functionalities of the popular scikit-learn library.
- It provides implementations of three machine learning algorithms: Perceptron, Linear Regression, and K-Means clustering.
- Additionally, the package includes datasets and examples for each algorithm for illustration.

TECHNICAL SKILLS

- **ML/DL/NLP**: Pandas, Keras, Tensorflow, Scikit-learn, Matplotlib, Seaborn, PyTorch, MediaPipe, SpaCy, NLTK.
- **Software Development**: Python, C++, OOP, Algorithms, Data Structure, SQL, MongoDB, HTML, CSS, JS, Git, Streamlit, Flask.

GENERAL SKILLS

- **Languages**: Arabic (Native), English (**IELTS**:6.5 - 2019) **Others**: Teamwork, Communication Skills, Time management

ACHIEVEMENTS

- ACPC Finalist – *March 2023*
- Ranked **1st** consecutively in my college for 3 years in a row during my second, third, and fourth years of study.
- Contributed to **LeetCode** by adding a missing test case for a problem, enhancing the problem's robustness and clarity for future users. *ISSUE LINK*

EXTRACURRICULAR ACTIVITIES

- Tanta ICPC Management | Competitive programming mentor *April 2023 – July 2023*
- IEEE TU |Graphic designer – organizer @ IEEE Mid-Year-Training Event *2018 – 2020*