Basel ashraf

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Professional Summary

Machine Learning Engineer and Data Scientist specializing in Deep learning and AI Web applications *Seeking a Machine Learning Engineer role to develop and deploy advanced models.* Proven track record of:

- Developing machine learning models and optimizing deep learning pipelines for real-time use
- Strong expertise in AI, machine learning, and deep learning, supported by solid mathematical skills

Education

B.Sc. Computational Science & AI *Zewail City • Expected 2026*
Major : Data science and artificial intelligence

- Machine Learning, NLP
- Database Systems, Agile Development

Work Experience

Coding Instructor (Part-time) *June 2024 – Present*
Ischool, Cairo, Egypt

- Taught foundational programming concepts to beginner students aged 7-14
- Guided students in building interactive games using block-based programming
- Instructed Python programming to enhance problem-solving skills
- Provided detailed feedback to improve coding abilities and project outcomes

Research Experience

Breast Cancer Detection Using XAI Techniques *Feb 2024 – Present*

- Developed deep learning models (ResNet50, DenseNet121, and a modified ResNet50) to classify tumors as benign or malignant, achieving a **utility score of 84%**
- Applied Explainable AI (XAI) techniques such as LIME, Partial Dependence Plots (PDP), and Individual Conditional Expectation (ICE) to interpret model predictions
- Designed an interpretable deep learning system to analyze and detect tumor shapes in breast cancer images, addressing class imbalance and disordered data
- Achieved a significant improvement in the Normalized Utility Score compared to benchmark studies
- *Technologies:* Python, TensorFlow, PyTorch, Keras, LIME, SHAP
- View GitHub Repo

Selected Projects

AI-Powered Crop Disease Detection Web Application *Mar 2024 - present*

- Designed and deployed a deep learning–based web application that classifies plant types and detects diseases from leaf images using Convolutional Neural Networks (CNNs)
- *Technologies:* HTML, CSS, JavaScript (Frontend); Flask (Backend); Microsoft Azure (Deployment)
- View GitHub Repo
- View Demo Link

Search Engine Web Application *Mar 2024 - present*

- Developed a web-based search engine with query preprocessing, keyword extraction, and context-aware ranking
- Integrated TF-IDF, BM25, and SBERT models to improve the relevance of search results
- *Technologies:* HTML, CSS, JavaScript (Frontend); Flask (Backend)
- View GitHub Repo

DIYora – Full Stack Web Application *oct 2023*

- Developed a feature-rich full stack web application fulfilling both functional and non-functional requirements
- Deployed on Microsoft Azure to ensure scalability and accessibility

- *Technologies:* HTML, CSS, JavaScript (Frontend); Flask (Python) (Backend); MongoDB (NoSQL Database)
- Project managed using Jira; version-controlled with GitHub
- View GitHub Repo
- View Demo Link

Skills

- **Technical Skills:**

  - **Natural Language Processing:** BERT, GPT, Transformer Models
  - **Machine Learning:** Python, scikit-learn, TensorFlow
  - **Computer Vision:** OpenCV, TensorFlow   **Web Scraping:** BeautifulSoup, Selenium
  - **Algorithms Data Structures:** Sorting, Searching, Graphs, Trees, Greedy, Dynamic Programming
  - **Data Analysis Visualization:** Pandas, NumPy, Matplotlib, Seaborn
  - **Web Development:** HTML, CSS, JavaScript
  - **Mathematics:** Linear Algebra, Calculus

- **Hardware Skills:**

  - **Proteus:** Circuit simulation, PCB design
  - **Arduino IDE:** Arduino development and debugging

- **Soft Skills:**

  - Teamwork, Leadership, Communication, Presentation, Project Planning
  - Reliable, proactive, and dependable in collaborative environments

Volunteer Experience

Organizer Volunteer   *June 2024 – Present*
Admission Event Organization

- Assisted in organizing and coordinating event participation logistics
- Enhanced **communication skills** through active interaction with attendees and participants

Volunteer Tutor   *June 2023 – Aug 2023*
ZC Khair

- Tutored C++ and Python to orphans, enhancing programming skills
- Organized technology workshops to spark interest in coding

Languages

English: Fluent – Full professional proficiency
Arabic: Native speaker

References

Dr. Mohamed Maher   Professor, Zewail City | momaher@zewailcity.edu.eg
Dr. Khaled Mostafa   Professor, Zewail City | kmelsayed@zewailcity.edu.eg
Eng. Mariam Labib   Teaching Assistant, Zewail City | t-mlabib@zewailcity.edu.eg