Kerollos Nabil Ghaly Labib

Biomedical Engineer

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Biomedical Engineering graduate with interdisciplinary expertise in AI and healthcare, specializing in machine learning and deep learning applications. Experienced in developing data-driven solutions for medical diagnostics and monitoring through real-world projects and industry training. Eager to contribute to innovative healthcare technologies through collaborative, technical, and research-driven roles.

EDUCATION

B.Eng. in Biomedical Engineering , Helwan University
Graduation date : May , 2025

GPA : 3.13 (Percentage : 78.5%)

RELEVANT WORK EXPERIENCE

National Telecommunication Institute - Machine Learning Intern **October 2024 – December 2024**

- Trained in ML fundamentals and applied techniques on **real-world medical datasets**
- Built and optimized pipelines for data preprocessing, feature extraction, and model training using TensorFlow and Scikit-learn.
- Collaborated on a team project that demonstrated AI's value in healthcare diagnostics, presented to **faculty and 20+ peers**.

Lifecare Technology Company — Maintenance Engineer Intern **September 2024**

- Assisted in diagnosing and maintaining **10+ ventilators and neonatal care devices** in **3 hospitals**.
- Repaired hardware components (valves, sensors) and supported **software installation/configuration** on **6+ devices**.
- Helped assess air pressure anomalies exceeding **4.5 bar**, reducing failure risk in high-pressure hospital infrastructure.
- Gained hands-on experience with **5+ types** of clinical equipment including incubators and phototherapy units.

Ghalioungui Trading Company — Sales Engineer Intern **August 2024 – September 2024**

- Participated in **10+ hospital visits** and **5+ client meetings** to promote medical devices, including ventilators and surgical tools.
- Conducted market research across **15+ healthcare institutions**, analyzing competitors and identifying key product gaps.
- Delivered product demonstrations and supported technical sales, contributing to **3 successful deal closures**.
- Represented the company at the **ONCO-AZHER conference**, assisting in AI-related presentations to an audience of **100+ professionals**.

Information Technology Institute (ITI) — Front-End Development Intern **July 2023 – August 2023**

- Created **5+ responsive web pages** using HTML, CSS, and JavaScript as part of a bootcamp capstone.
- Applied modern front-end frameworks to develop **user-friendly interfaces** with form validation and API integration.
- Improved design and usability based on feedback from **mentors and 10+ peers**, enhancing project performance.

Egyptian Railway Hospital — Clinical Training **July 2023 – August 2023**

- Operated and maintained **10+ types of biomedical equipment**, including ECGs and infusion pumps.
- Calibrated and documented device performance under supervision during **daily clinical rounds**.
- Gained exposure to hospital operations, patient monitoring systems, and biomedical workflows across multiple wards**.**

AI & ML Projects

Text-Based Depression Detection using NLP and Deep Learning **May 2025**

Developed a text classification system using sentence-transformer embeddings and a deep neural network, achieving **99% accuracy**. Applied advanced preprocessing, SMOTE for class balancing, and real-time inference for binary depression detection.

EEG-Based Emotion Recognition using DEAP Dataset **May 2024**

Built an EEG emotion recognition system using EFDM and HOG features from STFT-transformed signals, achieving **85% accuracy** with Extra Trees after applying PCA and SMOTE.

Facial Expression Recognition using MediaPipe and ML **March 2025**

Built a facial emotion classifier (happy vs. sad) using 468 landmarks from MediaPipe Face Mesh and AffectNet data, achieving 84% accuracy with DNN after applying SMOTE and Markov Chain-based temporal analysis.

Real-Time Brain Tumor Detection using Deep Learning **December 2024**

Developed a deep learning model for MRI-based brain tumor detection using ResNet-50, achieving 99% accuracy after preprocessing over 7,000 scans with normalization, enhancement, and data augmentation techniques.

AI-Powered Monkeypox Skin Lesion Classification **January 2024**

Built a classification system for monkeypox skin lesions by extracting features with ResNet-50 and training an SVM model, reaching 97.7% accuracy and addressing class imbalance using ADASYN sampling.

Graduation Project

Title: Multimodal Depression Detection Using Artificial Intelligence
Grade: Excellent

Description : An AI-based system for early depression detection using multimodal data, combining facial, audio, and EEG signals .

SKILLS

Technical Skills: Supervised Learning, Deep Learning, Computer Vision, NLP , Python , JavaScript , SQL , MATLAB , Scikit-learn , TensorFlow , Keras , PyTorch , OpenCV

Soft Skills :

- Effective communicator with experience delivering technical presentations and product demos
- Proven team contributor through collaborative engineering and AI projects
- Strong analytical abilities demonstrated in healthcare-focused machine learning models
- Adaptable under pressure, with experience managing multiple technical tasks across internships

Languages : Arabic (Native) , English (B2)