YASSIEN TAWFIK
BIOMEDICAL ENGINEER

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ABOUT ME

Biomedical engineer with a strong orientation toward AI, medical imaging, and digital diagnostics. Experienced in developing end-to-end software solutions using machine learning, computer vision, and biomedical signal processing.

TECHNICAL SKILLS

- **AI & Deep Learning**: Neural networks, CNNs classification, predictive modeling, model evaluation
- **Computer Vision**: Image segmentation, feature extraction, PCA, edge detection
- **ML Tools**: Scikit-learn, SHAP, TensorFlow, OpenCV, Pandas, Seaborn, SciPy
- **Programming**: Python, C++, C, Java
- **Data Handling**: Preprocessing, feature engineering, statistical evaluation
- **Digital Signal** Processing: Biomedical signal filtering, ECG processing
- **Embedded Systems**: Microcontroller interfacing, STM32 driver development
- **Web Development**: HTML, CSS, JavaScript
- **Bioinformatics**: Microbiome profiling, genomic data processing

EDUCATION

B.Sc. in Biomedical Engineering
Cairo University (2021 - Present) - GPA: **3.62**

RESEARCH INTERESTS

- AI-based medical diagnostics and decision support systems
- Deep learning for biomedical imaging and signal interpretation
- Explainable ML for clinical transparency and trust
- Multimodal data fusion in medical analysis (e.g., imaging + biosignals)

PROJECTS

- **Real-Time Patient Monitor**
  Deep Learning powered arrhythmia detection with smart alerts and noise-resistant display. [GitHub Link]
- **Oral Cancer Prediction**
  Microbiome-based model with SHAP insights and optimized features. [GitHub Link]
- **Explainable Breast Cancer Classifier**
  ML model for tumor detection with SHAP-based interpretability & visualizations. [GitHub Link]
- **Movie Recommendation System**
  Cosine CF & SVD, tested with Precision@K. [GitHub Link]
- **Advanced CV & Image Processing Toolkit**
  Custom tools for edge detection, segmentation, filtering, and matching [GitHub Link]
- **Automated Defibrillator System**
  Real-time detection of cardiac events. [GitHub Link]
- **Beamforming Simulator**
  Simulation for telecom and medical use [GitHub Link]
- **STM32 Smart Embedded Interfaces**
  Modular drivers for display, motor, and sensor control with simulation support. [GitHub Link]

INTERNSHIPS

- **Elevvo AI Internship | *2025 (Ongoing)***
  Project-based Intern ML, DL, and CV to real-world problems
- **Optoscient BME Intern | *2025 (Upcoming)***
  Internship on digital pathology systems and technical support.
- **Baheya BME Trainee | *2024 (90 Hours)***
  Clinical engineering and device training across hospital units.

CERTFICATES

- Frontend Web Development - HTML, CSS, JS
- CT Essentials – Siemens Healthineers

  Click Here to see all the Certificates