# YASSIEN TAWFIK

## BIOMEDICAL ENGINEER

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## PROFILE

Biomedical Engineering student at Cairo University, engaged in hands-on projects on medical device calibration and digital health applications. Committed to leveraging technology for healthcare advancements. Seeking internship opportunities to apply my technical knowledge in practical, innovative healthcare settings.

## PROJECTS

- **SegmaVision**
  - App for fast image segmentation using Otsu, spectral, K-means, and region growing. GitHub Link
- **SIFT-See**
  - Toolkit for feature extraction using Harris corner detector and SIFT algorithm. GitHub Link
- **EdgeEnhance**
  - Toolkit for edge detection using Hough Transform and Active Contour models. GitHub Link
- **CTG Heart Failure Monitoring System**
  - Monitors and analyzes HRV and FHR signals to detect health abnormalities. GitHub Link
- **Automated Defibrillator System**
  - ECG-integrated system for automated cardiac event response. GitHub Link
- **Dynamic Multi-Channel Signal Viewer**
  - Desktop application for enhanced medical signal visualization and management. GitHub Link
- **Z-Domain-Filter**
  - Designing and analyzing digital filters, featuring real-time updates. GitHub Link
- **Soundprints: Audio Fingerprinting App**
  - Audio recognition and mixing app using spectrogram-based fingerprinting. GitHub Link
- **Image-FT-Mixer**
  - FT-based tool for image component mixing with customizable frequency regions. GitHub Link
- **Beamforming Simulator**
  - Simulation for analysis in telecommunications and medical imaging. GitHub Link
- **Syringe Pump**
  - Precision medication dispensing system with advanced safety features. GitHub Link
- **Hospital Website**
  - Developed a secure and comprehensive hospital management system. GitHub Link

## CERTIFICATIONS

- Biomedical Training - Baheya Foundation
- Medical Devices Calibration

Click Here to see the Certificates

## EDUCATION

**CAIRO UNIVERSITY**

B.Sc. in Biomedical Engineering

2021 - Present

## PROFESSIONAL EXPERIENCE

**Biomedical Engineering Trainee**

Baheya Foundation | 2024 - 90 Hours

- Gained comprehensive insights into clinical engineering and medical planning.
- Worked with medical devices across multiple departments, including pathology, sterilization, therapy, physiotherapy, and diagnostics. Developed skills in the hardware and electronic components of medical devices, focusing on their maintenance and calibration to ensure optimal performance.
- Attended sessions covering hospital systems beyond tumor-focused care, broadening my understanding of various healthcare environments.

## TECHNICAL SKILLS

- **Biomedical Expertise**: Biomedical device calibration
- **Digital Signal Processing**: Manipulating signals using digital techniques
- **Data Structures**: Understanding of structures and their applications
- **Programming**: C, C++, Java, Python
- **Embedded Systems**: Microcontroller interfacing and low-level driver development
- **Computer Vision**: Segmentation, feature extraction, and image enhancement
- **Deep Learning**: Basic knowledge of neural network architectures
- **Web Development**: HTML, CSS, JavaScript
- **Software Proficiency**: MATLAB, MS Word, Excel, PowerPoint
- **Technical Writing**: Preparing technical documents and educational materials

## COMMUNITY ACTIVITIES & INTERESTS

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|---|---|
| Program Ambassador | British Council "Taqaddam" | 2018 - 2020 |
| Swimming Coach | Swimming Star Academy | 2020 - 2021 |
| Teaching Assistant | Mr. Omar Sherbiny | 2021 - 2022 |
| Operation Room Member | Ministry of Youth and Sports (YLY) |
| Event Organizer | In The Zone | 2023 - 2024 |
| Skydiving Instructor | Al Galaa Airborne | 2019 - 2022 |