

# Mohamed AboMandour

+20 11 2075 7634 | mhmdabomandour11@gmail.com |  |  | 

## EDUCATION

### Cairo University

*Bachelor of Systems and Biomedical Engineering*

Giza, Egypt

Sep. 2020 – Present

## TECHNICAL SKILLS

**Languages:** Python, C/C++, SQL, Java

**Data Analysis:** Polars, NumPy, Pandas, Matplotlib, Seaborn

**Machine learning:** Scikit-learn, Keras, PyTorch, OpenCV, Scipy

**Version Control:** Git, GitHub

**Desktop App Development:** Qt5, PyQt6

## PROJECTS

### AI-Driven Appointment Scheduler | *Machine learning, Data preprocessing, Gen-AI*



- Created a scheduler system for Fanous Clinic, USA, using AI to optimize appointments based on disease reports.
- Utilized patient data to provide real-time, data-driven recommendations, reducing decision-making time by 90%.

### VisionaryID | *Image Processing, OpenCV, Python, EigenFaces*



- Utilized OpenCV for offline and real-time face detection, and recognition using Eigenfaces, with 98% accuracy.
- Developed online camera integration and good visual representation of detection and recognition results

### ImageAlcemy | *Computer Vision, OpenCV, Python, PyQt6*



- Developed a comprehensive toolkit for various image processing and Computer Vision tasks with intuitive GUI
- Included Algorithms: Active Contours, Sift detector, Segmentation, Clustering Techniques, and Filters

### ICU Monitor Viewer | *DSP, Graph Manipulation, PyQt6, Python*



- Intuitive UI with dual graph display, cine mode, and signal manipulation features
- Developed signal file browsing, export to PDF reports, and seamless integration for optimal user experience

### Security Voice-code Access | *Speech recognition, Shazam Algorithm, pyAudioAnalysis*



- Utilized speech-to-text conversion, spectrogram, and voice fingerprinting technology to authenticate users
- Added real-time spectrogram display, matching score tables for passcodes and individuals, and access indicators

### DICOM Viewer with Volume Rendering | *vtk, Computer Graphics, PyQt6*



- Utilized vtkDICOMImageReader for loading DICOM series data by selecting a folder through a file dialog.
- Implemented both Surface and RayCast rendering with controls to adjust surface appearance.

### Signal Studio Pro | *PyQt6, DSP, Scipy*



- Implemented signal processing techniques, sinc interpolation for signal reconstruction, and precise error analysis.

## TRAINING

### Biomedical Engineer Trainee

July 2023 – Aug. 2023

*EGMED*

- Troubleshooted hardware errors and problems with medical devices and applied clinical engineering principles.
- Developed valuable soft skills through interaction with hospital staff and engineers.

### Apple Device Maintenance

Aug. 2022 – Oct. 2022

*IFIX Egypt*

- Diagnosed and fixed hardware issues with iPhones, and replaced broken or damaged parts such as screens, batteries, and cameras

## EXTRACURRICULAR ACTIVITIES

### Top 10 Presentations and shortlisted in the ITCS track

July 2023

*Nile University 16th UGRF 2023 Competition*

- Developed a Mobile app to input personal information and lifestyle habits to get the type of obesity.
- Added Suggestions for meals and exercises tailored to recommended calorie intake Using deployed ML model.

### Data analysis instructor

Sep. 2023 – Present

*IEEE EMBS*

- Developed guides on advanced data analysis methodologies, statistical techniques, and industry-standard tools.
- Designed and implemented effective data visualization strategies, translating intricate data patterns.