

EDUCATION

Cairo university
Systems and Biomedical Engineering, [Sep 2020– Jul 2025 (GPA: 3.7)]

PROJECTS

- **Security voice code access system** Dual-mode passcode validation and individual access using fingerprint and spectrogram concepts.
- **Real-time Digital Monitoring and Filtering System** for Interactive zero-pole placement and real-time filtering with frequency response visualization. [↗](#)
- **Full computer vision toolbox** Comprehensive image processing including noise addition, filtering, edge detection, and advanced feature extraction. [↗](#)
- **AI-Driven Prediction and Personalized Management of Obesity-Related Diseases** providing High-accuracy predictions with neural networks, logistic regression, and a personalized diet and exercise app using Python, Flutter, and Flask. [↗](#)
- Implementing a **learning management system** in C++ using the QT framework. [↗](#)
- A **medical institute information system** (website "Operato" with database). [↗](#)
- **Solar energy-dependent smart cane** for the blind provided with GPS and alarm system. [↗](#)
- **Flanker Experiment Implementation** to measure attention and response inhibition. [↗](#)
- **EEG Signal Processing and Mental State Classification Web Application** to process EEG signals and classify mental states using deep learning and Bidirectional LSTM including real-time actuator control and visualization and model development. [↗](#)
- Implementation of several **medical devices** prototypes

INTERNSHIPS [↗](#)

- Trained as a Biomedical engineer at AL_Asema hospital and Medical equipment Calibration lab, Biomedical Engineering department, Cairo University. [↗](#)
- Attended Siemens AUTOSAR & embedded systems summer course.
- Trained as a Maintenance Engineer at AEO (Arabic Engineering Office). [↗](#)
- Trained as a back office engineer at El-Geel trading company.
- Completed Human performance Accelerator lab training (Space Center Houston). [↗](#)
- Trained as a Biomedical engineer at Siemens Healthineers. [↗](#)

EXTRACURRICULAR ACTIVITIES

- Participated in NASA space apps hackathon 2023 and won "Best use of art" and "Global nominee" awards. [↗](#)
- Was one of the US embassy Egyptian ambassadors on a special visit to NASA headquarters, NASA space center as a part of the Egyptian American collaboration in the space field. [↗](#)
- Participated as a Competition volunteer at Nasa Space Apps Cairo 2024. [↗](#)
- Participated in organizing of 27th Job fair of the faculty of engineering Cairo University.
- Participated in organizing of 8th undergraduate Engineering Mathematics research day. [↗](#)
- Participated in the 16th UGRF researcher competition organized by Nile University. [↗](#)

SKILLS

DESKTOP DEVELOPMENT

C, C++, BLENDER.VTK
(VISUALIZATION TOOLKIT),
OPENGL, PYQT

WEB DEVELOPMENT

HTML, CSS, JAVASCRIPT, REACT

EMBEDDED SYSTEMS

CLOUD COMMUNICATION, RTOS,
AUTOSAR, ARM, PX4 BASICS.

DEVOPS

DOCKER, CI/CD

BACKEND DEVELOPMENT

DATABASE, DATA STRUCTURE,
SQL

AI & MACHINE LEARNING

TENSORFLOW, SCIKIT-LEARN,
PANDAS, NUMPY
NEURAL NETWORKS AND DEEP
LEARNING
LOGISTIC REGRESSION AND
CLASSIFICATION MODELS

NEUROSCIENCE

FSL, NEUROANATOMY, ROI

SIMULATION

PROTEUS, VERILOG, MODELSIM
GSEA

UBUNTU ADMINISTRATION