

# Amr Ahmed Gohar

[amrahmedgohar205@gmail.com](mailto:amrahmedgohar205@gmail.com) ❖ 01552366372 ❖ Cairo, Egypt ❖ [LinkedIn](#)

## SUMMARY

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Enthusiastic and dedicated biomedical engineering student with a passion for applying engineering principles to healthcare technologies. Possess a solid foundation in biomedical engineering principles and programming gained through academic coursework and hands-on projects.

## EDUCATION

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**Cairo University**  
*Bachelor of Biomedical Engineering*

**Expected Graduation: 2027**

## PROJECTS

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### Mind Code: Early Diagnosis of Alzheimer's Using PDEs and Machine Learning

*Tech Stack: Python, NumPy, Physics-Informed Neural Networks*

- Developed an innovative approach to early Alzheimer's diagnosis by integrating Physics-Informed Neural Networks (PINNs), symbolic regression, and reaction-diffusion PDE modeling.
- Modeled tau protein diffusion in the brain and predicted the reaction term in a reaction-diffusion PDE using synthetic and real PET scan data from the ADNI database.
- Created a dynamic web interface for interactive visualization of results, showcasing diffusion patterns and key findings.

### **Stock Trading Application**

*Tech Stack: Java, JavaFX, GUI, OOP*

- Developed a comprehensive stock trading application to enhance the trading experience for investors. The application includes:
  - Admin Features: Tools for managing user roles, monitoring trading activities, and overseeing market data integration.
  - User Interface: A sleek and intuitive interface for users to buy and sell stocks, create watchlists, and access real-time market data.
  - Advanced Analytics: Features for technical analysis, historical data review, and performance metrics to aid in informed decision-making.
- Through this project, I gained skills in object-oriented programming, user interface design, and data analysis.

### **Archer Game**

*Tech Stack: Java, GUI, Processing Software*

- Developed an engaging archer game that combines skill, strategy, and adventure. The game includes:
  - Gameplay Mechanics: Realistic archery physics, a variety of bows and arrows, and challenging targets to test players' accuracy and precision.
  - Levels: Multiple levels with unique obstacles.
- Through this project, I gained skills in game development, physics simulation, and user interface design.

## LANGUAGES

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- English
- Arabic

## STUDENT ACTIVITIES

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External Relations Member at IEEE EMBS CUSB

10 / 2023

*Cairo, Egypt*

## SKILLS

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- Machine Learning
- NumPy
- Problem Solving
- Arduino UNO

## Programming Languages

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- C++
- Python
- Java, JavaFX, Processing
- HTML, CSS, JavaScript
- SQL