

# Mohamed Khater

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## EDUCATION

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**Cairo University** — Bachelor of Computer Engineering

2021 - Present — GPA: 3.81 — 2nd in class (2022-2023)

Relevant Courses: Data Structures, Algorithms, Machine Learning, Operating Systems

## TECHNICAL SKILLS

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**Programming Languages:** C++, Java, Python, Dart, JavaScript

**Web Development:** React.js, Node.js, Express.js, SQL, MongoDB


**Mobile Development:** Flutter, Firebase

**Problem-Solving:** Algorithms, Data Structures, Competitive Programming

**Tools:** Git, GitHub, Linux, REST APIs

## PROJECTS


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**Telegram Application**  | *Flutter, Dart, Firebase*

- Developed a feature-rich Telegram-like app using Flutter and Dart, fully integrated with a custom backend.
- Implemented multi-method authentication (email, Google, Facebook, GitHub) and secure real-time messaging with end-to-end encryption.
- Developed advanced group and channel management, including admin roles and permissions.
- Added privacy controls, media sharing, and push notifications for a seamless user experience.
- Designed a user-friendly admin dashboard for managing users and filtering inappropriate content.
- Ensured smooth backend communication with REST APIs for robust and scalable performance.

**Who Is Talking**  | *Python, Machine Learning, Docker*

- Built a speaker classification system that identifies one of four classes: **male under 20**, **male over 20**, **female under 20**, or **female over 20**.
- Extracted robust audio features such as **MFCCs**, **Chroma**, and **Spectral Centroid** to improve voice-based classification.
- Used a stacking ensemble combining **GMMClassifier**, **SVM**, and a shallow **Neural Network** to enhance prediction performance.
- Containerized the full pipeline using **Docker** for consistent deployment and reproducibility.
- Project inspired by completing the **Machine Learning Scientist with Python** career track on DataCamp.

**License Plate Recognition System**  | *Python, Cv2*

- Designed a system to automatically recognize license plates using both classic machine learning and deep learning techniques, comparing their performance.
- Applied image processing techniques to enhance plate visibility and extract characters.
- Implemented database verification for access authorization based on recognized license plates.

**Search Engine**  | *Java, Algorithms*

- Developed a search engine with a web crawler, indexer, and ranking algorithm for efficient keyword-based search results.
- Implemented crawling and indexing to store and retrieve web pages effectively.
- Designed a ranking algorithm to improve the relevance and accuracy of search results.

## TRAINING & CERTIFICATIONS

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**Machine Learning and Data Science Training** — ITI, 2024

Covered Probability, Statistics, Supervised & Unsupervised ML, and Intro to Deep Learning.

**Flutter Bootcamp** — Udemy, 2024

30 hours: Advanced Dart and Flutter through 5 projects.

**Node.js, Express.js & MongoDB Bootcamp** — Udemy, 2024

42 hours: REST API, Authentication, Payment Integration.

## ACHIEVEMENTS

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- 2nd in class (2022-2023) with a GPA of 3.88.
- Completed 10+ projects in mobile and web development.
- Led a 10-person team to develop a full website for TCCD.
- Solved 400+ algorithm problems on LeetCode.