

# Abdelrahman Mahmoud

📞 **Phone:** (+2) 01144503386 / (+39) 3520656770

Portfolio | [LinkedIn](#) | [Github](#)

✉️ **Email address:** [abdelrahman.mo.abdulfattah@gmail.com](mailto:abdelrahman.mo.abdulfattah@gmail.com)

📍 **Address:** Via Leonardo Da Vinci, 22, Cornaredo MI.

## Education & Training

---

Università degli Studi di Milano-Bicocca

October 2025 – Current

Studying in a master's program Artificial Intelligence for Science and Technology.

Cairo University, Faculty of Engineering

October 2020 – July 2025

Bachelor of Computer Engineering, graduated with **excellence (GPA 3.9)**.

IEEE Embedded Systems Course

June 2023 – August 2023

Learned about various use cases for AVR microcontrollers and how to develop embedded systems.

Software Developer Intern

July 2023

Worked as a software developer intern at Cargas Egypt, where I developed a shop application demo for the company.

Software R&D Intern

Sep 2024 – Dec 2025

Worked as a software developer intern at Siemens in HAV team, where I developed debugging and profiling tools for various fields (threading / ethernet / ...).

## Projects

---

**PEARL** | AI (RL) | Python, C++, ImGui ([Link](#))

- Designed a benchmarking framework to evaluate reinforcement learning agents using explainability methods such as SHAP, LIME, LMUT, and policy stability metrics.
- Built an extensible platform that allows users to plug in and test custom RL models in a comparative and interpretable environment.
- Completed as a graduation project in collaboration with Ericsson, with a focus on improving transparency and trust in autonomous learning systems.

**EPIC** | Chip-Design | Modelism, Verilog, Java, Assembly ([Link](#))

- Designed a 5-Stage pipelined CPU that can execute 32 different instructions (ldd, ldm, add, sub, etc..).
- Created an assembly language and its compiler to work with the CPU supporting more than 35 instructions and memory variables.

**Paimon: No Way Home** | GameDev | C++, OpenGL ([Link](#))

- Created a custom game engine from scratch using C++ and OpenGL, supporting features such as: Bloom, Custom PP effects, Forward Rendering, etc.
- Developed an illusion-based 3D platformer game where players use the camera to solve various puzzles and progress through levels.

**Truck-Chan** | Embedded | Embedded C, Java, Kotlin ([Link](#))

- Worked in a team of 11 people to develop a swift robot capable of solving mazes accurately and quickly, as well as a line follower while also developing an application to control and work as the robot's vision.
- Won 1st place in the maze competition and 3rd place in the line follower competition in our department.

## Arabic-Font-Type-Detector | AI | Python, OpenCV, Jupyter ([Link](#))

An AI pipeline to detect the font type of Arabic text in images, accommodating various scales and rotations.

- Achieved accuracy of 99.8% on the university test set, securing 1st place in our department.
- The project A demo is available for testing [\[here\]](#). The dataset used can be accessed [\[here\]](#).

## Discordo | Fullstack | TypeScript, NextJS, React, Tailwind, Prisma, MongoDB ([Link](#))

Created a fullstack discord clone alone. Including features such as:

- Real-time text chatting
- Video and audio chatting
- Server moderation
- One-To-One Conversations

A demo for testing can be found [here](#).

## GigaChat | Cross-platform | Flutter, RestfulAPIs ([Link](#))

- Worked with a team of 5 people to develop a cross-platform X clone, using flutter, copying almost all of X's (formerly twitter) functionalities like Realtime chatting, posts feed, trends, etc.
- Employed an Agile workflow as a team leader to ensure iterative progress and collaboration to deliver the project in less than 3 months.

## Irmisul | cross-platform | Flutter, Java, SpringBoot, MongoDB

- Developed a cross-platform search engine from scratch, implementing various crawling, indexing, and ranking algorithms, while having a response time of less than 50ms.
- Used Flutter for the [front-end](#) and Java with Spring Boot for the [back end](#).

## Promptopia | Fullstack | JavaScript, NextJS, React, Tailwind, MongoDB ([Link](#))

Created a platform (in less than 4 days) where people can publicly share useful text-posts such as useful prompts to feed into AI's, cool stories, etc. featuring the following:

- Searching for other users & posts.
- Managing prompts created by a certain user.

A deployed demo can be found [here](#).

## Skills

---

### Front-end

- Android (Java / Kotlin).
- Flutter.
- React – Tailwind – HTML – CSS.
- NextJS.

### Hardware

- VHDL.
- Arduino.
- AVR.
- System Verilog / Verilog.
- Logic Design

### Back-end

- SpringBot.
- Node.JS.
- Prisma (MySQL / MongoDB).
- Express.

### Miscellaneous

- Git.
- Machine Learning.
- Image Processing (Open CV).
- C / C++
- OpenGL.
- Artificial Intelligence
- Reinforcement Learning

## Certificates

---

### Cybersecurity Summer Course at Cairo University

July 2023 – Sep 2023

([certificate](#))

I studied various aspects of cybersecurity, including cryptography, penetration testing, malware analysis and reverse engineering.

### Software Developer Internship at Cargas Egypt, Naser City

July 2023

([certificate](#))

### Ranked 1<sup>st</sup> place in Micro-Mouse line follower and maze competition.

May 2024

([certificate](#))

### Siemens Experience Certificate.

Dec 2024

([certificate](#))

### Cairo University Graduation Certificate

July 2025

([certificate](#))

### Cairo University Transcript of Records

July 2025

([certificate](#))