Ali Tarek Mohamed

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EDUCATION

Faculty of Computer Science and Artificial Intelligence - Cairo University 09/2021 – Present

Relevant Courses:

- **Software Engineering**
- **Algorithms Design and Analysis**
- **Object-Oriented Programming**
- **Computer Networks**
- **Database Systems**
- **Operating Systems**
- **Data Structures**

PROJECTS

ShopSphere (MERN Stack)
- **See Project**
- Developed a full-stack e-commerce platform enabling users to browse, filter, and purchase products.
- Built dynamic pages for product listings, detailed views, and cart/checkout flows using Next.js routing.
- Implemented responsive, accessible UI with Tailwind CSS for a seamless user experience across devices.
- Used Axios to handle client-server communication and integrated MongoDB for backend data management.

Soundora (Next.js, TypeScript, Tailwind CSS, Supabase)
- **See Project**
- Developed a full-stack music sharing platform where users can upload and stream audio tracks.
- Implemented Supabase authentication and storage for secure file uploads and user sessions.
- Designed a modern, mobile-friendly interface with dynamic routing and real-time track playback.
- Integrated track management with features like title, image, and genre assignment using PostgreSQL via Supabase.

Portfolio (Next.js, Tailwind CSS)
- **See Project**
- Built a fully responsive portfolio website showcasing projects, technical skills, educational background, and proficiency in development software.
- Styled with Tailwind CSS for a clean, maintainable design system and consistent responsive layout.

Student Management System (C++)
- Developed a streamlined student information management system using OOP principles.
- Utilized advanced data structures for efficient data handling:
  - Binary Search Tree (BST): Efficiently searched student IDs.
  - AVL Tree: Maintained balanced height for consistent operation time complexity.
  - Min Heap: Prioritized students with the lowest GPA.
  - Max Heap: Optimized access to students with the highest GPA.
- Enhanced data retrieval efficiency and accuracy, ensuring optimal system performance.

InstaChat (MERN Stack)
- Developed InstaChat, a real-time chat application
- Utilized Node.js and Express for a robust server-side architecture.
- Implemented Socket.io for real-time bidirectional communication between server and clients.
- Designed a user-friendly interface supporting private chats only, with all users as friends by default.

SKILLS

Frontend Technologies: ReactJS | NextJS | Tailwind CSS | HTML | CSS | JavaScript | TypeScript

Backend Technologies: NodeJs | ExpressJs | PostgreSQL | MongoDB

Other Languages and Tools: C++ | Git | GitHub | Design Patterns | SOLID Principles | REST API | Problem Solving

Basic Knowledge With: Java | Python | Docker | RabbitMq | Supabase

ACHIEVEMENTS

Meta Hacker Cup Contestant 2023
- Qualified through all three rounds, achieving top 8% in the Practice Round **(948/12,138)**, top 20% in Round 1 **(3,941/20,324)**, and top 57% in Round 2 **(3,532/6,193)**.

ECPC
- Participated twice in ECPC qualifications, contributing significantly to competitive programming.

LANGUAGES

English — Fluent

Arabic — Native/Bilingual