

Mai Mohamed Kamel

Back-End Developer

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Location: Cairo, Egypt

PROFESSIONAL SUMMARY

Results-driven **Back-End Developer** with extensive experience in **Node.js** and **Express.js**, specializing in building robust REST APIs and high-performance backend applications. Proficient in database management with MySQL and MongoDB and experienced in implementing secure authentication systems using JWT and OAuth. Adept at leveraging TypeScript, integrating APIs, and optimizing backend performance. Skilled in React.js and Next.js for full-stack development, including SSR and SSG. Proven ability to develop real-time features with Socket.IO and deploy applications on AWS. Committed to writing clean, maintainable code following SOLID principles and Agile methodologies.

EXPERIENCE

Open-Source Web Development Intern – NTI Hire Ready Program

National Telecommunication Institute (NTI) — Cairo, Egypt

Oct 2025 – Feb 2026

- Completed an intensive Open-Source Web Development Track, mastering modern full-stack technologies and collaborative software practices.
- Developed and contributed to multiple open-source web projects using HTML5, CSS3, JavaScript, React.js, and Node.js, enhancing team deliverables.
- Utilized Git and GitHub for version control, pull requests, and community-driven project contributions.
- Implemented responsive UI components and optimized code quality by participating in Agile sprints and peer code reviews, improving overall project maintainability.
- Enhanced technical communication skills through Business English modules, focusing on professional writing, email etiquette, and effective presentations.

Embedded Systems Engineer (Siemens DISW Sponsorship)

Faculty of Engineering, [Helwan University] — Cairo, Egypt

Oct 2024 – July 2025

- Collaborated with Siemens DISW to develop a Parallel Secure Boot Strategy enhancing bootloader performance and system security.
- Designed and implemented bootloader code for the Infineon TC399XP ECU and developed low-level drivers (AES, TRNG, Command Sequencer, Bridge Driver) for the HSM core.
- Optimized CMAC algorithm in C for the HSM hardware AES module to ensure secure and efficient firmware validation.

EDUCATION

Bachelor of Communication and Information Technology **Faculty of Engineering, Helwan University — Cairo, Egypt**

Oct 2020 – Jul 2025

GPA: 3.22/4.00

SKILLS

Technical Skills

- **Languages:** JavaScript, TypeScript, Python, C, C++, HTML, CSS
- **Backend:** Node.js, Express.js, REST APIs, GraphQL, JWT, OAuth, Socket.IO, Nodemailer
- **Frontend:** React.js, Next.js, Tailwind CSS, Bootstrap, Axios
- **Databases:** MongoDB, MySQL, SQL
- **Tools & DevOps:** Git, GitHub, AWS (basic), VS Code
- **Testing & Practices:** Postman, Debugging, Error Handling, SOLID, Agile

Soft Skills: Problem-Solving, Communication, Teamwork, Time Management, Effective multitasking

COURSES

National Telecommunication Institute (NTI)

Open-Source Developer Track – Full Stack Development **Oct 2025 – Jan 2026**

- Comprehensive program covering frontend and backend development: HTML5, CSS3, JavaScript, React.js, Node.js, Express.js, MongoDB, Docker, and CI/CD.

Machine Learning Specialization – Coursera (by Andrew Ng) **Jul 2024 – Sep 2024**

- Covered supervised learning (regression and classification), advanced learning algorithms, and unsupervised learning.
- Studied recommender systems and reinforcement learning foundations.

ARM Microcontrollers (Cortex-M4) – Eng. Amgad Samir **Jul 2024 – Jul 2025**

- Learned ARM Cortex-M3/M4 architecture and low-level embedded programming.
- Worked with STM32F446RE (Nucleo) and STM32F103C8T6 (Blue Pill) boards.

Embedded Systems Diploma, Information Technology Institute (ITI) **Aug 2023 – Sep 2023**

- Trained in embedded systems fundamentals, C programming, and embedded C.

PROJECTS

- **Estate Hub – Real Estate Platform**

Graduation Project | NTI HireReady – Open Source Application Development Track

Estate Hub is a full-featured real estate platform that connects Buyers, Sellers, and Administrators through a role-based system with tailored experiences for each user type.

- Designed and implemented a **role-based architecture** supporting buyers, sellers, and administrators.
- Built advanced property search with filters (sale/rent, location, price) and **interactive map integration** using OpenLayers.

- Developed seller dashboards for **property management, analytics, and engagement tracking**.
- Implemented full admin control for **users and properties (CRUD operations)** with statistics and analytics.
- Integrated secure authentication including **OTP verification, password recovery, and role-based authorization**.
- Implemented additional features such as **favorites management, mortgage calculator, visit scheduling, and secure payments**.
- Focused on responsive UI with **light/dark mode**, modern animations, and accessibility.

Social Media App Platform | Full Stack Web Application

Tech Stack: Node.js, Express.js, React.js, MongoDB, Socket.io, JWT, Tailwind CSS

- Engineered a scalable MERN-stack social media application with RESTful APIs.
- Designed secure authentication system using JWT and bcrypt password hashing.
- Developed CRUD operations for posts, comments, replies, and notifications.
- Implemented real-time chat and live updates using Socket.io.
- Integrated Cloudinary for media uploads and optimized responsive frontend UI.

Social Media App Backend (Advanced)

Node.js, Express.js, MongoDB, Socket.IO, JWT, Multer, Cloudinary

- Developed a scalable backend for a real-time social media platform supporting authentication, user management, and role-based access control.
- Integrated Socket.IO for instant messaging and live notifications.
- Implemented image upload with Multer and Cloudinary for media storage.
- Enhanced security with Helmet, rate limiting, password hashing (bcrypt), and JWT authentication

Personal Portfolio Website

HTML, CSS, JavaScript

- Built a responsive portfolio website showcasing projects, skills, and contact information.

Graduation project sponsorship, Siemens-DISW

Our graduation project with Siemens is about a parallel secure boot strategy. Enhancing performance of bootloader and booting with security consideration.

- Developed Bootloader code for host system on Infineon TC399XP ECU.
- Developed low level drivers such as (AES, TRNG, Command Sequencer & bridge driver) for TC399XP-HSM core.
- Developed CMAC Algorithm C-code optimized for HSM H.W AES module.

LANGUAGES

- Arabic: Native
- English: Fluent
- French: Intermediate (B1)