Ahmed Nasser Hemdan

Software Engineer — Backend Engineer

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Summary

Fourth-year Computer Science student with strong software engineering foundations and hands-on experience building backend systems and production-ready applications. Skilled in designing RESTful APIs, working with relational databases, and applying object-oriented principles to develop scalable and maintainable software.

Education

Bachelor of Computer Science, *Cairo University*   *Oct 2022 – Present*

Grade: Very Good

Relevant Courses: Algorithms, Data Structures, Database Systems, Operating Systems, Software Engineering, Discrete Mathematics, Computer Networks, Statistics and Probability.

Professional Experience

Machine Learning Ambassador   *GTC, Sep 2025 – Oct 2025*

- Selected among the top candidates from 2,000 applicants to serve as a Machine Learning Ambassador.
- Supported community initiatives by helping peers understand core ML concepts and applications.
- Actively engaged in technical discussions covering core ML topics and data analysis.

iOS Internship   *Banque Misr, Aug 2024 – Sep 2024*

- Integrated RESTful APIs to enable reliable client-server communication and data-driven application behavior.
- Developed and maintained production-level mobile features within an agile development environment.
- Improved application usability and performance through iterative development and optimization.

Certifications

- **Machine Learning Specialization** – DeepLearning.AI & Stanford University
  Completed a hands-on specialization covering supervised and unsupervised learning, neural networks, and ensemble methods with practical implementations.
- **Forward Program – Core Skills Level** – McKinsey & Company
  Selective program focused on problem-solving, leadership, and professional communication.

Projects

E-Learning Management System – Learning management platform

- Designed and developed a learning management system to support course management, user enrollment, and content delivery.
- Implemented role-based access control to handle different user roles such as students, instructors, and administrators.
- Built core business logic for managing courses, users, and interactions, ensuring maintainable and modular code structure.
- Integrated persistent data storage to manage users, courses, and enrollments reliably.
- **Technologies:** Java, Spring Boot, PostgreSQL.

<u>**FastAPI Blog API**</u> – Production-ready backend system

- Designed and implemented a production-ready RESTful API using FastAPI, following clean architecture principles and modular design.
- Implemented secure authentication and authorization using JWT with role-based access control for users and administrators.
- Designed relational database schemas and integrated PostgreSQL using SQLAlchemy ORM, ensuring data integrity and efficient querying.
- Managed database schema evolution using Alembic migrations to support iterative feature development.
- **Technologies:** Python, FastAPI, PostgreSQL, SQLAlchemy, Alembic, Docker, JWT.

<u>**BazzarBook**</u> – E-commerce platform for book sales

- Designed and developed a multi-user e-commerce platform for managing book sales, orders, and user accounts.
- Implemented role-based access control to support different user roles (e.g., customers and administrators) with secure authorization logic.
- Integrated Stripe payment processing and order management workflows, handling validation, transaction states, and business rules.
- Designed and managed relational data models to support products, users, orders, and transactions.
- **Technologies:** C#, ASP.NET MVC, SQL Server.

Technical Skills

- **Software Engineering Fundamentals:** Object-Oriented Programming, SOLID Principles, Design Patterns
- **Backend Development:** RESTful API Design, Authentication & Authorization, Role-Based Access Control
- **Programming Languages:** Python, Java, C#, C++, C
- **Frameworks & Libraries:** FastAPI, Spring Boot, ASP.NET
- **Version Control & Tools:** Git, Linux, Docker
- **Databases:** PostgreSQL, SQL Server, MySQL, SQLAlchemy ORM

Languages

- Arabic
- English