Ibrahim Ahmed Ibrahim

.NET Back-End Engineer, EG

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Summary

Final-year Computer Science student and Software Engineer passionate about building scalable, efficient software solutions. Experienced in designing clean, maintainable architectures, API development, and microservices. Deeply invested in AI/ML and Retrieval-Augmented Generation (RAG), with hands-on experience in fine-tuning models and integrating LLMs into enterprise applications using Semantic Kernel and LangChain. Always seeking to merge cutting-edge AI with real-world applications.

Skills

Languages	Python, C#, C/C++, JavaScript, SQL.
Frameworks & Libraries	ASP.Net Core, .NET Aspire, EF Core, LINQ, Semantic Kernel, LangChain
Databases	MS SQL Server, PostgreSQL, NoSQL, Vector Databases (PineconeDB)
DevOps & Tools	Docker, Redis, NGROK, Git, Postman, Linux
Concepts	OOP, SOLID, Caching Strategies, Data structures & Algorithms, Design patterns, Database design.
Software Engineering	Agile, SDLC, Unit Testing, Clean Architecture, Microservices and Event-Driven Architecture.
Soft Skills	Teamwork, Tech Leadership, Problem-solving, Documentation, Public Speaking & Technical Presentations.

Projects

OllamaNet
Graduation Project

Advanced LLM Platform built with ASP.NET Core, integrating Our LLM Inference Engine with the full capabilities suite of LLMs in an enterprise-grade Event-Driven architecture.

2025

- **Architecture:** Microservices architecture with distinct components for API Gateway, Core Services, and Database layer.
- **Authentication:** JWT, role-based authorization, with refresh mechanism.
- **Database:** Data layer using EF Core with Repository and Unit of Work patterns, caching with Redis.
- **Features:** Sophisticated chat functionality, Model selection, Advanced Parameters Control, system message, and history tracking.
- **API Design:** RESTful APIs, Swagger documentation, input validation, proper error handling, and CORS configuration.
- **Performance Optimization:** load balancing, caching strategies, asynchronous operations for efficient retrieval of AI responses.
- **Technical Skills:** ASP.NET Core, EF Core, Redis, JWT, Microservices Architecture, HTTP, LLM Inference, Git, Docker
- **Infrastructure:** Docker containerization
- **Soft Skills:** System Architecture Design, Technical Documentation, Team Management.

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LLM Deployment with Ollama Server Integration
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Developed and implemented a local Large Language Model (LLM) server using Ollama, enabling efficient deployment and interaction with various open-source language models.

FEB 2025

- **Model Deployment, Management:** deployed multiple LLM models (Qwen 2.5, Llama 3.2, Phi 3) using Ollama framework.
- **Server Infrastructure:** Optimized server performance with CUDA-based GPU acceleration for efficient model inference
- **Cloud Integration:** Integrated NGROK for secure tunneling, enabling remote access to the local LLM server
- **Technical Skills:** LLM Deployment, Python, REST APIs.

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Speech-to-Text Transcription
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Converting speech to text using Google's Speech Recognition engine. With a HTTP interface for audio processing, supporting file uploads and microphone input, with specific optimization for Arabic language.

FEB 2025

- **Development:** RESTful API architecture using FastAPI. API layer (request handling, validation), Service layer (recognition logic)
- **Features:** Audio file transcription with WAV format support Real-time microphone input processing, Arabic optimization (MSA dialect)
- **Performance:** Asynchronous I/O operations for improved throughput Efficient file handling with automatic cleanup
- **Technical Skills:** Python FastAPI, RESTful API, Speech Recognition Integration, Async Programming, API Documentation, Git Commands.

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Estate Agent

Real Estate Property Management System built with ASP.NET Core. It provides functionality for
managing properties, users, contracts, payments, and projects.

- **Development:**follows a layered architecture with distinct Presentation, Business, and Data Access layers..
- **Features:** property listing, user management, contract handling, and pagination for efficient data retrieval..
- **Performance and Security:** Prioritized fast, secure, reliable, scalable, maintainable, and user-friendly features for optimal UX and data protection
- **Technical Skills:** C#, .NET Core, EF Core, Dependency Injection, Repository and Unit of Work patterns, Unit testing with MSTest, Identity framework.
- **Soft Skills:**Teamwork, LeaderShip, Documentation, Debugging and resolving issues, Presentation skills

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TensorFlow Flower Image Classifier

An image recognition model, Using TensorFlow and Keras, efficiently classifies flower images using data
augmentation, to mitigate overfitting. It demonstrates iterative model improvement by training, testing.

- Utilizes advanced deep learning methodologies to categorize flower images into distinct classes with high precision.
- Incorporates sophisticated techniques such as data augmentation and dropout to optimize model performance, ensuring robustness against overfitting and enhancing generalization capabilities.
- Employs a systematic approach to model refinement through iterative training, and parameter tuning, resulting in continual enhancement of classification accuracy and reliability.
- **Technical Skills :** Python, TensorFlow and Keras, Data Preprocessing, Model Evaluation.
- **Soft Skills:** R&D.

TETRIS

Modern implementation of the classic Tetris game . Features smooth gameplay, intuitive controls, and a
sleek user interface. Perfect for both nostalgic gamers and new players alike!

- **Development:**Developed using WPF.NET with C. includes various classes for different blocks and game functionalities.
- **Features:**GameGrid.cs: Manages the grid, including layout and cell states. Game state management for fluid gameplay transitions.
  GameState.cs: Handles the overall state of the game, the score, the level, the active piece and the logic of the game.
  Block.cs: Defines Tetris block properties, shape, rotation, and movement logic.
- **Technical Skills:** C#, WPF.NET, OOP, Data Structures, GIT.

Image Reproduction Using Genetic Algorithm

Uses a genetic algorithm to evolve an image over generations, aiming to closely reproduce a target
image. It leverages the pygad library for algorithm operations, demonstrating the optimization of image
reproduction through evolutionary processes.

- Development:Developed customizable parameters for the genetic algorithm, allowing for easy adjustments.
- Achieved a 30 percent reduction in experiment setup time through the framework.
- Integrated a fitness function to assess image similarity.
- Developed a callback function to track progress during the algorithm's execution.
- **Technical Skills:** Python, pygad, gari, numpy, imageio, matplotlib

Work Experience

OutlierAI

Freelancer

- Assisted in training Large Language Models to evaluate their responses and behavior, ensuring robust functionality and integration.
- Developed comprehensive LLM evaluation reports, identifying model weaknesses and suggesting improvements
- writing challenging prompts to find the wake points of the LLM's responses about coding and software engineering subjects.
- **Technical Skills:**C#, Python, Java, Latex, technical Writing.

DEPI

Backend Intern

- Assisted in the development and maintenance of RESTful APIs using ASP.NET Core, ensuring robust functionality and integration with front-end systems
- Utilized Entity Framework Core to design and manage database schemas, write queries, and handle migrations to support dynamic data interactions
- Understanding of software development lifecycle and agile methodologies
- **Technical Skills:**C#, .NET Framework, Entity Framework, ASP.NET, MVC, REST API, SwaggerUI , GitHub.
- **Soft Skills:** Teamwork, Time Management,Adaptability, Communication, Presentation skills.

Freelancer *Egypt*

Backend Developer *2024*

- Developed tailored applications for clients, ensuring high performance and scalability.
- Developed Custom Solutions: Designed and developed .NET back-end solutions for various clients, including creating APIs, integrating with third-party services, and ensuring scalability and performance.
- Engaged directly with clients to understand their needs, provide technical advice, and deliver tailored solutions. Maintained regular updates and feedback loops to ensure client satisfaction
- **Technical Skills:**C#, .NET Framework, Entity Framework, ASP.NET, MVC, REST API, SwaggerUI , GitHub.
- **Soft Skills:** Teamwork, Time Management,Adaptability, Communication, Presentation skills.

Publications

MEDIUM ARTICLES

Achievements

Mansora	**Summer Training**, ITI summer Training Program .Net web Developer Track	*Jun-2024*
	BootCamp, Participating at Digital Egypt Pioneers Initiative "DEPI for .NET web development rack	*May 2024*
	contest, Participated as a chess judge for university chess contest representing my student union social committee	*2022*
	BootCamp, NextCoders initiative studying Udacity's nano degree program	*2019*

Education

Kafr El-Sheikh University *Kafr El-Sheikh, EG*

Faculty of Computer Science *2021 - 2025 Current*

- Computer Science major
- **Courses:** Data structure/& Algorithms, Project management, Software Engineering, Web development, Information Systems, AI/& Machine Learning, Computer networks

DEPI *Hybrid*

Digital Egypt Pioneers Initiative *May 2024*

- Web Development .Net Track
- **Courses:** Web development, Database Managing, MS SQL Server, Advanced C, LinQ, Entity Framework, REST API, MVC, business English, Free-Lancing

Languages

ARABIC Native proficiency

English Professional proficiency

References available upon request.