Erfan Habibi Ehsani

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Professional Summary

A driven and detail-oriented Computer Science student with a strong foundation in software engineering, machine learning, and system design. Proven ability to develop complex applications in Python and C#/.NET, as demonstrated by advanced projects in network communication and message brokering. Seeking a challenging role to apply my skills in software development and problem-solving.

Education

B.Sc. in Mathematics and Computer Science, Amirkabir University of Technology, Tehran, Iran *2020 – 2025 (Expected)*

Relevant Coursework: Data Structures, Algorithms, Machine Learning, Advanced Programming

Experience

C# and .NET Bootcamp Trainee, System Group (Hamkaran System), Tehran, Iran *2024*

- Developed and delivered multiple applications during an intensive one-month bootcamp focused on C# and the .NET ecosystem.
- Applied object-oriented programming (OOP) principles and software development best practices to build robust, scalable applications.
- Collaborated in a team environment to complete practical projects, participating in code reviews and receiving mentorship from senior engineers.

Projects

Message Broker System (C#) github.com/Erfanhabibi/MessageBroker

- Developed a robust Message Broker system in C# to guarantee ordered, persistent, and reliable data transfer between distributed producers and consumers.
- Architected a decoupled plugin system using interfaces and attributes, allowing third-party developers to dynamically extend functionality.
- Implemented a multithreaded architecture allowing producers and consumers to define their thread counts, optimizing for concurrent performance.
- Engineered a file-based persistence layer to ensure message durability and prevent data loss during server failures or restarts.
- Built an automated retry mechanism and a configurable logging system to improve system resilience and monitorability.

Server-Client Communication System (Python) github.com/Erfanhabibi/python-socket

- Engineered a server-client system in Python for real-time image and audio data transfer using TCP/IP sockets.
- Developed a multi-threaded server with a Tkinter GUI to capture and manage incoming data streams from multiple clients.
- Utilized OpenCV for webcam image capture and PyAudio for audio recording, creating a robust multimedia streaming pipeline.

Skills

Programming Languages	Python, C#, C++, Java, C
Frameworks & Platforms	.NET, ASP.NET, Entity Framework, Django, Flutter
Machine Learning & Data	NumPy, pandas, scikit-learn, TensorFlow, Keras, SQL (MySQL, PostgreSQL)
Image Processing	OpenCV, Pillow, scikit-image
Networking & Security	TCP/IP, Socket Programming, Network Security Fundamentals
Tools & Concepts	Git, Linux Basics, Algorithms, Data Structures, Problem Solving