Hafsa Rahman

Software Engineer

CONTACT

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PROJECT & EXPERIENCE

Robort Car project

- Designed and developed an autonomous robot car with sensor-based navigation.
- Programmed movement logic and obstacle detection using C++ and hardware components such as ultrasonic sensors, IR sensors, and Arduino etc.
- Led the project team, ensuring timely completion and successful demonstration.

E-Commerce Website

- Built a full-stack online store with product management and authentication.
- Used Next.js for server-side rendering, React.js for component-based development, and Tailwind CSS for creating a responsive and visually appealing UI.
- Focused on responsive design and user-friendly UI.

Hospital Management System

- Developed a full software-based system for hospital management.
- Implemented patient records, appointment scheduling, and billing features.
- Used Java, OOP principles, and database integration for efficient performance.

Water Level Detector

- Designed and built a sensor-based system to monitor and indicate water levels.
- Applied logic gates and circuit design principles for accurate detection.
- Enhanced understanding of hardware-software integration.

Machine Learning Model Development

- Collected and prepared real-world data for analysis using Python.
- Performed data cleaning, stopwords removal, and exploratory data analysis (EDA).
- Applied encoding techniques and split data for testing and training.
- Trained a machine learning model to generate accurate predictions and insights.

Inventory Management System

- Developed a complete inventory system using Python with a user-friendly interface.
- Implemented functionalities for adding, updating, deleting, and searching inventory items.
- Used file handling and data structures to store and manage inventory data efficiently.
- Improved coding skills in logic building, error handling, and modular programming.

Agentic AI Project

- Currently developing an AI system with autonomous agent capabilities.
- Designing workflows where agents can make decisions, perform tasks, and interact with data or APIs.
- Using Python and frameworks like LangChain or OpenAI APIs to enable reasoning and task execution.
- Exploring concepts such as prompt chaining, memory, and tool usage to build intelligent behaviors.

SKILLS

- **Programming Languages:** Java, Python, JavaScript, C++, SQL
- **Web Development:** HTML, CSS, TypeScript, React.js, Next.js, Sanity.io
- **Software & Tools:** Git/GitHub, Vercel, VS Code, Firebase, WordPress
- **Core Concepts:** Data Structures & Algorithms, OOP, Database Management
- **Soft Skills:** Team Collaboration, Problem-Solving, Leadership

EDUCATION

Sindh Madressatul Islam University | 2023–Present
Bachelor of Science in Software Engineering

Govt. College for Women | 2021–2023
Intermediate in Pre-Engineering

Be Prince Kids School | 2019–2021
Matriculation in Computer Science

COURSES & CERTIFICATES

Machine Learning Certificate
IBM (Coursera) | 2025

Artificial Intelligence, Web 3.0 & Metaverse
Governor Sindh Initiative | 2023–Present

Graphic Designing Certificate
Bano Qabil | 2024

Freelancing Course
DigiSkills | 2024

LANGUAGES

🗣 **English –** Fluent

🗣 **Urdu –** Native

🗣 **Arabic –** Basic