

# Hasnat Rasool

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## TECHNICAL SKILLS

**Languages:** Python, JavaScript, TypeScript, SQL, HTML/CSS, Solidity

**Frameworks:** n8n, Flask, React.js, Angular, Node.js, .NET, Streamlit, Electron.js, LangChain, Web3.js,

**Databases:** MongoDB, MS SQL Server, PostgreSQL, VectorDB

**Tools & AI/ML:** Git/GitHub, AWS, Docker, REST APIs, RAG Systems, Ollama, Evolution API, Workflow Automation

## EDUCATION

*Bachelor of Science in Computer Science*

2020 – 2024

**National University of Computer and Emerging Sciences (FAST)**

Islamabad, Pakistan

## EXPERIENCE

### Full-Stack Software Developer

*Angular, Spring, Powersoft 19*

Jan 2025 – Present

Lahore, Pakistan

- Built a Flask REST API processing 4M+ products (MongoDB) with singleton connection pooling (maxPoolSize=50) and optimized timeout configurations for production reliability. With NLP ingredient parsing (90% accuracy) and fuzzy matching (85%+ accuracy) across dynamic MS SQL Server tables, including E-codes, labeled ingredients, and scraped data from multiple sources.
- Engineered RAG-based chatbots using LangChain and Ollama (Llama 3.2) with ChromaDB vector databases for context-aware technical assistance and conversation memory management.
- Developed an automated task management workflow using n8n, integrating the Evolution WhatsApp API with Smartsheet, and implementing scheduled morning triggers for task distribution and webhook-based response processing. Built JavaScript code blocks for parsing employee status updates (Completed/In Progress/Pending) and percentage values, with bidirectional API synchronization updating Smartsheet rows in real-time.
- Engineered ETL pipelines for automated data extraction (web scraping), transformation (NLP parsing, normalization), and loading into SQL Server, with in-memory caching reducing API response times from 2s to 200ms.
- Developed an automated web scraping system using Selenium and BeautifulSoup for extracting ingredient data with pagination handling, retry logic, and structured CSV export for database import.
- Collaborated with a 3-person development team using Git workflows, conducting code reviews, and participating in daily standups for feature development.
- Designed Angular applications for time-series visualization using ECharts WebGL, handling 1M+ data points with real-time interaction, custom timestamp parsing, and CSV export functionality.
- Built desktop applications using Electron.js and .NET (C# WinForms) for internal data management, image processing tools, and cross-platform utilities with secure IPC communication.

### Web Development Intern

*CyberSoft Vantage*

Jul 2023 – Oct 2024

Islamabad, Pakistan

- Developed production MERN application features, including implementing React components with hooks and state management and collaborating on Express.js REST APIs with MongoDB integration.
- Participated in Git-based workflows, including code reviews, pull requests, and CI/CD pipelines, ensuring code quality and deployment standards.

### Teaching Assistant

*National University of Computer and Emerging Sciences*

Spring 2023 – Fall 2023

Islamabad, Pakistan

- Conducted lab sessions for CS 118, CS 1004, and CS 2001, mentoring 100+ students in C/C++ programming, data structures, and debugging techniques.

### Event Manager

*TEDxFASTIslamabad*

Sept 2022 – Dec 2022

Islamabad, Pakistan

- Managed operations and logistics for FAST's first official TEDx event, coordinating speakers, venue setup, and audience engagement initiatives.

## PROJECTS

### FYP - TrustIsMust | MERN, Python, Machine Learning, AWS

- Developed a full-stack system using MERN with ML integration to detect fake reviews, implementing Naive Bayes classification and PyABSA for aspect-based sentiment analysis using NLP techniques.
- Built an automated review scraping pipeline with multiple ML classifiers generating real-time trust scores, deployed on AWS (EC2, S3, RDS) with MongoDB for high-volume processing.

## **EngineerBot - AI Technical Assistant | Python, LangChain, Ollama, RAG, ChromaDB**

- Developed an RAG chatbot using LangChain and Ollama (Llama 3.2) with ChromaDB vector database and mxbai-embed-large embeddings, achieving 95%+ relevance in retrieving engineering design notes from 1,000+ documents using top-k similarity search.
- Built a Streamlit interface with conversation memory, structured data extraction, and an analytics dashboard tracking user interactions and query patterns.

## **CSV Time Series Visualization Tool | Angular, TypeScript, ECharts WebGL**

- Built a high-performance Angular app visualizing 1M+ data points with ECharts WebGL, implementing overlay/stacked modes, dynamic channel selection, and custom timestamp parsing (DD-MM-YYYY HH:MM:SS.ms) with microsecond precision.
- Developed a robust CSV parser using PapaParse with row-by-row streaming and progress tracking, processing 500MB+ datasets without browser crashes while maintaining a responsive UI.

## **CERTIFICATIONS**

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- AWS Academy Graduate: AWS Academy Microservices and CI/CD Pipeline Builder
- freeCodeCamp: JavaScript Algorithms and Data Structures
- W3 School: HTML and CSS
- Datacamp: Introduction to Python