

# Muhammad Ahsan Rasheed

## AI Engineer & Full-Stack Developer | Generative AI, LLMs, RAG, AI Agents & Automation

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[Portfolio](#) | [LinkedIn](#)

### Professional Summary

AI Engineer and Full-Stack Developer with 3 years of experience in building Generative AI applications, LLM-powered systems, RAG pipelines, AI agents, voice agents, and workflow automation solutions. Hands-on experience with cloud and local LLM deployment, including Llama-based models, vector databases, document processing, API integrations, and n8n automation workflows. Experienced in developing inbound and outbound AI voice workflows, integrating AI capabilities with backend systems and third-party services, and working with machine learning, transformer-based models, and full-stack web applications.

### Skills

- **Generative AI & LLMs:** Large Language Models (LLMs), Generative AI, RAG, AI Agents, AI Chatbots, Prompt Engineering, LangChain, Local LLMs, Llama, Embeddings, Semantic Search
- **Vector Databases & Retrieval:** Pinecone, Chroma, FAISS, Vector Search, Embedding Generation, Document Ingestion, Semantic Retrieval, Contextual Retrieval
- **AI Automation & Voice:** n8n, AI Workflow Automation, Business Process Automation, AI Voice Agents, Voice Assistants, Inbound Call Automation, Outbound Call Automation, API-Driven Workflows, Webhooks
- **Machine Learning & NLP:** Machine Learning, Transformer Models, NLP, Classification, Model Training, Model Evaluation, Scikit-learn, TensorFlow
- **Backend & Integrations:** C#, .NET, ASP.NET Core, REST APIs, API Development, Third-Party Integrations, Google Integrations, Apple Integrations, Webhooks
- **Full-Stack Development:** React, Next.js, JavaScript/TypeScript, HTML, CSS, Full-Stack Application Development
- **DevOps & Platforms:** CI/CD, GitHub Actions, Git, Application Deployment, Payment Gateway Integrations, Stripe, External API Integrations

### Experience

#### AI Software Engineer

03/2024 - Present

Asimplify | Islamabad, ICT, Pakistan

- Develop production-oriented LLM-powered applications, RAG solutions, AI agents, chatbots, and document-based question-answering systems for business applications and workflow automation.
- Design and implement RAG and semantic retrieval pipelines using Pinecone, Chroma, and FAISS, covering document ingestion, embedding generation, vector search, semantic retrieval, and contextual information retrieval.
- Build AI automation workflows using n8n, REST APIs, webhooks, databases, LLM-powered components, and third-party services to automate multi-step business processes.
- Configure and integrate local LLM environments using Llama-based models, connecting locally hosted models with retrieval pipelines, backend services, and application workflows.
- Develop AI voice agents and voice-assistant workflows for inbound and outbound calls, integrating conversational AI with APIs, application data, backend systems, and automated business processes.
- Work with machine learning and transformer-based models for NLP, classification, prediction, and intelligent application features.
- Build backend APIs and integrate LLMs, AI agents, external tools, databases, and third-party services into production-oriented AI applications.
- Integrate Google and Apple platforms and services with web and AI-powered applications through APIs, authentication flows, and application integration workflows.
- Develop and maintain full-stack applications using .NET, PostgreSQL, React, and RESTful APIs, integrating AI and automation capabilities into end-to-end application workflows.
- Integrate payment gateways and external platforms, including Stripe and Checkr, into service-booking, transaction, and workflow-driven applications.
- Support application deployment, CI/CD pipelines, production maintenance, system integrations, and end-to-end delivery of AI and full-stack application features.

## AI Software Engineer Intern

10/2023 - 02/2024

Asimplify | Islamabad, ICT, Pakistan

- Assisted with Python-based AI applications, chatbot development and automation workflows.
- Contributed to full-stack development, API integrations and testing under the engineering team.

## Research Associate (Training)

02/2023 - 09/2023

COMSATS University, ComSens Lab | Islamabad, ICT, Pakistan

- Researched machine learning and data analysis, developed predictive models and evaluated performance.
- Collaborated with researchers on AI experiments, modeling approaches and interpretation of results.

## Education

### Bachelor of Science in Computer Science

10/2019 - 08/2023

IQRA University Islamabad | Islamabad, ICT, Pakistan

- Major in Computer Science and Artificial Intelligence.

## Projects

### AI Persona System

2025

- Developed a Python-based LLM application that creates conversational personas from uploaded documents, with responses reflecting the user's tone, style and language.
- Implemented document ingestion, embedding generation and RAG with a vector database to retrieve relevant personal context for responses.

### AI-Powered Quran Chatbot

2025

- Built a domain-specific chatbot using RAG, vector databases and Supabase to answer questions with verse references, translations and contextual explanations.
- Implemented semantic search and retrieval pipelines to supply relevant source passages to the conversational response workflow.

### Document Management and Directory Platform

2025

- Built a TypeScript and Supabase platform with file uploads, organization management, member access control and document verification.
- Implemented embedding-based semantic search using a vector database to help users locate relevant documents.

### Home Services Marketplace Platform

Present

- Developed a full-stack application with Node.js, TypeScript and Supabase for household service requests, caregiver applications and bookings; integrated Stripe payments and Checkr background checks.

### Marketplace Platform

2024 - 2026

- Developed and maintained .NET REST APIs, business logic and PostgreSQL integration; contributed React UI components and frontend feature integration.

### MASCO Home Appliances (Full-Stack E-COMMERCE Platform)

2026

- Designed and developed a modular full-stack e-commerce platform using Next.js, React, TypeScript, Supabase, and PostgreSQL, including versioned REST APIs and a structured database for products, customers, carts, orders, payments, inventory, and reviews.
- Implemented secure authentication and authorization, server-side checkout validation, transactional order processing, payment verification, inventory management, idempotency, error monitoring, and CI/CD deployment through GitHub Actions and Vercel.

### Real Estate Price Prediction

2023

- Developed and compared Linear, Ridge, Lasso, Elastic Net, K-Nearest Neighbors and Bayesian Ridge regression models. Implemented stacking ensembles and evaluated predictions using MSE, MAE and MAPE.

## Additional Projects

- **Subscription Management Mobile Application (2025 -2026):** Developed a React Native and Supabase app for subscription tracking, renewal reminders, cancellation management and real-time data synchronization.

- **Event Ticketing Platform (2024):** Contributed .NET backend and API changes to support a US event ticket sales platform.
- **Crypto Prediction Community Platform (2025):** Contributed user-interaction and data-management features for a community sharing cryptocurrency predictions.
- **Healthcare Appointment System (2023):** Contributed to patient appointment booking and healthcare interaction workflows.

## **Mentorship**

- **[Dr. Nadeem Javaid](#):** Research mentorship in machine learning, AI systems and data science at COMSATS University Islamabad.
- **[Dr. Muhammad Bilal Bashir](#):** Final-year project supervision in machine learning, regression models and predictive systems.