Muhammad Waleed

0344-9794349 | mwaleed.bscs23seecs@seecs.edu.pk | LinkedIn | Github |Portfolio

PROFESSIONAL SUMMARY

AI & Product Engineer specializing in LLM systems, RAG pipelines, and full-stack AI applications. Experienced in building production systems that combine backend services, AI inference pipelines, and user-facing web products. Skilled at bridging the gap between cutting-edge AI research and practical, scalable implementations, with a strong focus on end-to-end product development, from prototyping AI features to deploying robust APIs and intuitive interfaces that solve real user problems.

EDUCATION

BS Computer Science (CGPA:3.21) **2023-Present**
SEECS, NUST H-12 Campus Islamabad, Pakistan

WORK EXPERIENCE

AI Engineer **February 2026–July 2026**
Ashtech Digital Solutions

Developed and deployed real-time conversational AI systems integrating STT, LLM-based dialogue orchestration, tool-calling workflows, and TTS pipelines.Built retrieval pipelines using embeddings and vector similarity search for context-aware LLM responses. Designed stateful agent logic, optimized WebRTC streaming latency, implemented failure handling and evaluation mechanisms, and ensured production-grade scalability and reliability.

Blockchain Developer **June 2025-Sept 2025**
CSN Lab SEECS, NUST NUST H-12

Engineered a blockchain supply chain tracker using Ethereum, IPFS, and Solidity for real time provenance and fraud reduction. Conducted end to end testing and process simulation to eliminate bottlenecks, reducing delivery delays by 20%, and presented the system architecture and efficiency gains to stakeholders.

PROJECTS

OpenClaw Security Auditor: Automated Vulnerability & Hardening Scanner | Python, Shell, jq, LLM Integration

Engineered an open-source security auditor for agentic workflows, utilizing shell tools for local configuration audits and vulnerability detection. Built a pipeline that leverages an LLM to generate automated remediation reports, driving adoption to **2.3k+ users** while ensuring the tool remained certified benign on VirusTotal and native security scans. https://clawhub.ai/muhammad-waleed381/openclaw-security-auditor

Mistral-for-Diction: LLM Fine-Tuning for Structural Scaffolding | *PyTorch, Unsloth, QLoRA, Mistral 7B, Google Colab*

Fine-tuned Mistral 7B (v0.3) on a free T4 GPU using Unsloth + QLoRA (4-bit); reduced memory usage by ~60% and doubled training speed.Built a PEFT (LoRA) “structure generator” for academic/technical report templates via synthetic dataset; achieved 0.75 training loss while preserving academic integrity through placeholders.

Vibe-Vox: Adaptive Emotional Text-to-Speech Engine | Python, PyTorch, Transformers, Qwen Models, Async Pipelines

Developed a real-time adaptive TTS using quantized Qwen models for sentiment analysis and dynamic prosody, enabling emotionally expressive, identity-persistent speech. Built a low-latency async pipeline featuring semantic chunking, cross-fade audio stitching, and streaming, optimized via 4-bit quantization and Flash Attention.

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TECHNICAL SKILLS

Languages: Python, Golang, SQL, C/C++,Java,Javascript
Frontend & Web: React, Next.js, HTML/CSS, Tailwind CSS
LLM & AI Systems: RAG pipelines, embeddings, vector search, LangChain, tool calling, LoRA/QLoRA fine-tuning
ML & DL: PyTorch, TensorFlow, Transformers, LangChain, Pandas, NumPy, Matplotlib
Systems & Deployment: Git, AWS, Docker, MLOps tools (e.g., Ollama), Vector Search Tools, Agentic AI Tools
Databases : MongoDB, PostgreSQL, SQL, Vector Databases (Pinecone/Chroma)
Backend & APIs : Node.js, FAST API, REST APIs, MongoDB integration