

# Muhammad Umar Nawaz Janjua

Senior Software & AI Engineer

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## EDUCATION

### Bahria University

*Bachelor of Science in Software Engineering*

Islamabad, Pakistan

Sept. 2020 – Sept. 2024

## EXPERIENCE

### Lead Software & AI Engineer

*Intelligent Solutions*

June 2024 – January 2026

Islamabad, Pakistan

- Architected a scalable **B2B Outreach Ecosystem** handling millions of records, integrating a custom Email Verifier (90% cost reduction) and high-speed web scrapers.
- Developed an Enterprise **RAG System** for Mandumah capable of querying 1.5M+ Arabic/English research documents using **LangGraph** and **Vertex AI**.
- Engineered a high-concurrency credit scoring engine using **Golang (Chi Router)**, ensuring strict data validation and transactional integrity.
- Designed multi-modal AI agents (Voice/Chat) and managed full backend lifecycles including CI/CD and DevOps on **GCP**.

### Contract AI/ML Engineer

*Voilabs*

Nov. 2023 – May 2024

Remote

- Fine-tuned **DONUT Transformers** for OCR-free document intelligence, extracting structured data from French invoices with high accuracy.
- Built a full-stack **AI E-Learning Platform** using Next.js, integrating **Tavily** for live web browsing to generate educational content dynamically.
- Developed a bidirectional Resume Automation Engine using XML manipulation and AI to automate formatting for thousands of documents.

### Open Source Developer

*Self-Employed*

Jan. 2022 – Present

Remote

- Authored **Blitz Parse**, a high-performance Python library written in **Rust**, significantly outperforming PyMuPDF for large-scale PDF extraction.
- Winner** of Stability AI Hackathon (LabLab.ai): Developed a VS Code extension using Stable Code models for local, low-latency code completion.
- Created **Invoice Watcher**, a cross-platform **Electron.js** app for real-time local directory monitoring and automated data entry into Google Sheets.

## PROJECTS

### High-Scale Email Verification Engine | *Python, AsyncIO, GCP, Redis*

- Built a proprietary verification system replacing commercial tools like Reoon, reducing costs by 90%.
- Implemented multi-layered checks (Syntax, DNS, SMTP probing) and advanced heuristics to process hundreds of thousands of emails daily.
- Deployed on GCP with autoscaling and distributed task queues (Celery/Redis) for massive parallelism.

### Mandumah Multi-Doc Agent | *LangGraph, Vertex AI, LlamaIndex*

- Developed an agentic RAG system for a major Arabic academic database scaling to 1.5 million documents.
- Utilized hierarchical agents to route queries for summarization or deep Q&A, handling complex Arabic morphology.
- Optimized embedding generation with multi-threading to handle large-scale indexing without OOM errors.

### B2B Leads Platform | *FastAPI, React, PostgreSQL, Docker*

- Architected a comprehensive data platform hosting millions of B2B leads with streaming upload capabilities.
- Implemented a fraud-resistant credit system and tier-based data access (Verified vs Unverified).
- Ensured sub-second search speeds across millions of records using optimized PostgreSQL queries.

### SWCC Natural Language Interface | *Python, Gemini, SQLAlchemy*

- Built a secure NL-to-SQL interface for the Saline Water Conversion Corp to query sensitive databases.
- Implemented strict intent classification guardrails to block destructive commands (DELETE/DROP) while allowing safe insights.

## TECHNICAL SKILLS

**Languages:** Python (Expert), Go (Production), Rust (Tooling), TypeScript, SQL (PostgreSQL), HTML/CSS

**Frameworks:** FastAPI, Django, Chi (Go), React, Next.js, LangChain, LlamaIndex, Electron

**AI/ML:** PyTorch, HuggingFace, Vertex AI, OpenAI API, Weaviate, ElasticSearch, RAG

**Developer Tools:** Docker, AWS, Google Cloud Platform (GCP), Git, Redis, CI/CD, Linux/Vim