

M. USMAN TARIQ

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SUMMARY

Software Engineer at Huawei specializing in telecom network analytics, KPI dashboard development, and intelligent workflow automation. Experienced in transforming daily alarm, cell, VLAN, software, and hardware datasets from nationwide telecom sites into actionable operational insights. Developed 10+ dashboards with context-aware chatbot and API capabilities, reducing data interpretation time from 1–2 hours to a few clicks. Additional experience in artificial intelligence, machine learning, secure full-stack development, and cloud technologies.

EDUCATION

FAST University <i>Bachelor's in Software Engineering</i>	Islamabad, Pakistan 2022 – 2026
Army Public School / Fazaia College <i>Higher Secondary School Certificate (HSSC)</i>	Islamabad, Pakistan 2020 – 2022

TECHNICAL SKILLS

- **Languages:** Python, Java, JavaScript, C++, C#, HTML/CSS, SQL
- **AI & Machine Learning:** PyTorch, LangChain, HuggingFace, Diffusion Models (DDPM), FBCSP+LDA, Grad-CAM, RAG, NLP, Computer Vision, Signal Processing
- **Data Analytics & Automation:** KPI Development, Dashboard Development, Data Analysis, Excel Data Processing, API Integration, Workflow Automation
- **Web & Backend Stack:** MERN Stack (MongoDB, Express, React, Node.js), FastAPI, Socket.IO, Streamlit, Firebase, Web Crypto API
- **DevOps & Cloud:** Docker, Kubernetes, CI/CD, Git, AWS, Linux/Shell Scripting
- **Databases & Tools:** FAISS (Vector DB), SQLite, JUnit, Jira, Figma, Wireshark, Packet Tracer
- **Languages Spoken:** English (Fluent), Urdu (Fluent), German (Basic)

WORK EXPERIENCE

Huawei Technologies <i>Software Engineer</i>	Islamabad, Pakistan 2026 – Present
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- Developed 10+ KPI-driven dashboards for monitoring telecom network sites across Pakistan, consolidating daily cell, VLAN, alarm, software, and hardware data into clear operational views.
- Reduced the time required to interpret network data from approximately 1–2 hours to a few clicks, enabling teams to identify site issues, performance trends, and abnormal conditions more efficiently.
- Automated the analysis of recurring Excel-based network datasets, eliminating the need to manually compare records, interpret raw values, and estimate the likely source of site-level problems.
- Built context-aware chatbot and API capabilities into dashboards, enabling users to query network data conversationally and receive relevant insights and recommended actions.
- Designed KPIs and operational metrics that translate complex telecom data into concise summaries for the engineering team, team lead, and supervisor-level meetings.
- Analyze nationwide telecom infrastructure and fault data to improve understanding of network dependencies, recurring alarm patterns, and potential root causes.
- Support decision-making workflows by connecting detected network issues with practical troubleshooting recommendations and follow-up actions.

National Incubation Center <i>Software Engineer Intern</i>	Islamabad, Pakistan 2025
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- Engineered a web-based room scheduling system using Firebase for real-time backend integration, reducing booking conflicts and improving scheduling coordination.
- Collaborated with the Community Expert on operational initiatives, managing requirements gathering and cross-team execution.
- Directed marketing content creation, including the ideation, scripting, and editing of video reels to support platform engagement.
- Facilitated and co-organized ecosystem events such as “League of Launchers” and primary cohort activities, ensuring smooth operational execution.

Parliament of Pakistan <i>Software Engineer Intern</i>	Islamabad, Pakistan 2024
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- Automated a previously manual internal ticketing system, improving workflow efficiency and reducing cross-departmental response times.
- Participated in parliamentary sessions to gather operational requirements, serving as a technical liaison between multi-disciplinary government teams.

Pakistan Television (PTV)

Software Engineer Intern

Islamabad, Pakistan

2024

- Produced and edited digital public service messages for national broadcast, using media-production tools to create high-quality visual content.
- Collaborated with editorial and broadcast teams to deliver polished content designed for wide public outreach.

TECHNICAL PROJECTS

End-to-End Encrypted Secure Chat

React, Node.js, Web Crypto API, Socket.IO

- Architected a zero-knowledge messaging and file-sharing platform in which the server routes ciphertext without accessing plaintext content.
- Implemented client-side AES-256-GCM message encryption and chunk-based 64KB file encryption to protect data confidentiality.
- Engineered an ECDH P-256 secure key exchange authenticated using ECDSA digital signatures to mitigate Man-in-the-Middle attacks.
- Integrated forward secrecy and replay-attack protection using ephemeral keys, timestamps, nonces, and sequence counters.

Explainable Diffusion Model for Medical Imaging

PyTorch, UNet DDPM, Grad-CAM

- Developed an end-to-end conditional diffusion pipeline on the PathMNIST benchmark using a capacity-upgraded UNet with Classifier-Free Guidance.
- Integrated Grad-CAM and Integrated Gradients to interpret synthetic image generation and identify clinical-validity bottlenecks.
- Evaluated downstream clinical validity against a three-layer CNN classifier and conducted mode-collapse analysis on minority classes.

Multi-Agent Distributed Backend System

FastAPI, Python, Docker, SQLite

- Engineered a multi-agent framework featuring a centralized supervisor node and pluggable worker agents for distributed task routing and autonomous coordination.
- Developed a Gemini wrapper with local and cloud execution modes, along with an assignment-coach agent featuring task planning and SQLite-based long-term memory.
- Implemented API authentication, short-term memory management, and containerized deployment scripts for scalable execution.

Enterprise LLM-Based RAG Pipeline

LangChain, FAISS, Ollama, Streamlit

- Built a Retrieval-Augmented Generation system that ingests documents through PyPDF and creates semantic embeddings using HuggingFace Sentence Transformers.
- Integrated a FAISS vector database for semantic search, grounding local Ollama LLM responses in retrieved document context.
- Designed a Streamlit interface initially configured as an interactive FYP handbook assistant and adaptable to other document collections.

Real-Time Brain-Computer Interface Pipeline

Python, FBCSP+LDA, PyQt6, LSL

- Developed an EEG-processing pipeline to classify hand motor imagery and rest states using FBCSP and LDA classifiers on Cz, C3, and C4 channels.
- Engineered a real-time sliding-window classifier connected to Lab Streaming Layer streams for live human-computer interaction.
- Built a PyQt6 desktop application supporting synthetic and live data recording, model training, and real-time evaluation.

CERTIFICATIONS & TRAININGS

- **AWS Cloud Practitioner Essentials** – Amazon Web Services
- **LangChain for LLM Application Development** – DeepLearning.AI
- **Docker Foundations** – Docker
- **Officer Training** – Pakistan Institute for Parliamentary Services (PIPS)