# FAIZAN AHMED RAZA

## AI Solution Architect & Full-Stack Engineer | Agentic AI Systems | LLM Orchestration | Cloud Microservices

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## PROFESSIONAL SUMMARY

AI Solution Architect and Full-Stack Systems Engineer with 5 years of experience engineering scalable cloud microservices, enterprise data pipelines, and production agentic AI architectures. Currently completing a Master's Thesis at BMW Group (Munich) deploying deep learning anomaly detection and high-throughput streaming systems. Proven expertise architecting multi-agent orchestration loops (LangGraph, CrewAI, MCP), RAG knowledge backends, and cloud-native services across AWS, Docker, and Kubernetes. Track record of delivering full-stack web platforms from design to 99.9% uptime production deployments.

## CORE COMPETENCIES & TECHNICAL SKILLS

- **Agentic AI & LLM Systems:** LangGraph, CrewAI, AutoGen, Model Context Protocol (MCP), Tool Calling & Function Execution, RAG Pipelines, Multi-Agent Planning & Memory, Vision LLMs, Prompt Engineering, RAGAS Eval.
- **Full-Stack & Backend Engineering:** TypeScript, Python, C#, Node.js (NestJS, Express), Next.js / React, FastAPI, C++ (.NET Core), GraphQL, RESTful APIs, PostgreSQL, Redis, Vector DBs (Qdrant, Pinecone, Chroma).
- **Enterprise Cloud & MLOps:** AWS (ECS, EKS, S3, Lambda, RDS), Docker, Kubernetes, Terraform, CI/CD (GitHub Actions), Microservices Architecture, PyTorch, Hugging Face, MLflow.
- **Data Engineering & Autonomous Systems:** DuckDB, Apache Parquet, Streaming ETL, CAN Bus/UWB Telemetry, Time-Series Anomaly Transformers, ROS, Low-Latency Systems.
- **Programming Languages:** Python, TypeScript / JavaScript, C/C++, C#, Go, SQL, Bash.

## PROFESSIONAL EXPERIENCE

### Software Engineer (Master Thesis: AI Anomaly Detection)
**05/2026 – Present**

*BMW Group | Munich, Germany*

- **AI Solution Architecture:** Designed a 5-layer deep learning anomaly detection framework (combining Anomaly Transformer, Isolation Forest, and Bayesian Laplace Uncertainty Quantification) for multi-ECU CAN/CAN-FD bus networks.
- **Cloud & Streaming Data ETL:** Engineered high-throughput streaming pipelines processing 180GB+ of raw vehicular traces (.blf, .mf4) using Python, Apache Parquet, and DuckDB with zero out-of-memory bottlenecks.
- **Agentic / Automated Triage:** Architected an automated telemetry triage pipeline using Bayesian epistemic uncertainty bounds, programmatically classifying known signal faults versus novel out-of-distribution events for engineering review.

### Working Student - Early Phase Vehicle Concepts
**10/2025 – 03/2026**

*BMW Group | Munich, Germany*

- **Full-Stack Analysis Dashboard:** Developed a real-time web-based visualization dashboard using React, TypeScript, and Python WebSockets for UWB and CAN signal logging, featuring 3D spatial plotting and video stream synchronization.
- **Low-Latency Embedded Firmware:** Engineered deterministic C++ safety firmware on bare-metal / RTOS microcontrollers; developed interrupt-driven crash detection executing battery isolation and door unlocking in <50ms (exceeding 70ms target).
- **Automated Data Processing Pipeline:** Built automated data pipelines converting vehicle telemetry formats (MF4 to .npz) for centralized cloud storage and downstream ML analysis.

**Working Student - Computer Vision & AI Research** **02/2025 – 07/2025**
*TH Nürnberg (@ohm - AI) | Nuremberg, Germany*

- **Multimodal AI Microservice:** Developed an automated inference framework integrating Vision LLMs, YOLO derivatives (Faster R-CNN, Mask R-CNN, Ultralytics), and OCR via a FastAPI backend to extract health analytics from unstructured screenshots.
- **Model Fine-Tuning & Pipeline Optimization:** Fine-tuned multimodal vision models in PyTorch, establishing data pre-processing and automated annotation workflows that accelerated model training cycles by 35%.

**Software Engineer** **11/2022 – 10/2024**
*Koderlabs | Karachi, Pakistan*

- **Enterprise Backend & Microservices:** Architected multi-tenant RESTful and GraphQL backend microservices using Node.js (NestJS, Express), TypeScript, C# (.NET Core), and TypeORM/Prisma serving 50k+ monthly active users.
- **Cloud Architecture & Reliability:** Designed and maintained AWS cloud infrastructure (ECS, RDS, S3, CloudWatch) with automated GitHub Actions CI/CD pipelines, sustaining 99.9% uptime across production PostgreSQL and MongoDB clusters.
- **System Optimization:** Implemented distributed caching and query optimization via Redis, reducing average API response latency by 45%.

**Full Stack Engineer** **01/2022 – 10/2022**
*Saasfa (Pvt.) Ltd. | Karachi, Pakistan*

- **Full-Stack SaaS Development:** Engineered scalable enterprise web applications with Angular, React.js frontends and Node.js / PHP (Laravel) backends, integrating relational databases, third-party payment gateways, and automated auth workflows.

## EDUCATION

**Master of Engineering (M.Eng.) in Autonomous Driving** **10/2024 – Present**
*Coburg University of Applied Sciences | Coburg / Munich, Germany*

- **Focus:** Sensor Fusion, LiDAR/Camera Perception, Path Planning, ROS, Deep Learning for Autonomous Navigation, V2X Communication.
- **Autonomous Vehicle Prototype:** Developed an autonomous vehicle prototype in a 6-member team: implemented real-time object recognition, pupil facial verification, driver emotion recognition, parent web interface, and cloud integration.

**Bachelor of Science (B.Sc.) in Information Technology** **10/2018 – 10/2022**
*Bahria University | Karachi, Pakistan*

- **Core:** Data Structures & Algorithms, Distributed Systems, Artificial Intelligence, Database Architecture & Management Systems, Software Engineering.

## CERTIFICATIONS & TECHNICAL ACCOMPLISHMENTS

- **Front-End Web & JS Frameworks (Angular):** The Hong Kong University of Science and Technology (Coursera ID: 5LXJBK24V4RF)
- **Node.js, C# & Problem Solving Certifications:** HackerRank (Verified Skill Badges: 7AE0BBF54ECA, 9F028E6EC16A, 2ECEE041FF53)
- **Game Development & Modelling:** National Vocational & Technical Training Commission - NAVTTC (ID: S210613463)

## LANGUAGES & ELIGIBILITY

- **Languages:** English (Full Professional Proficiency / Advanced), German (B1 in progress, daily professional use).
- **Work Authorization:** Resident in Munich, Germany (Full EU / German Work Authorization).
- **Availability:** Resident in Munich / (Starting Nov, 2026).

*Munich, October 2026*
**Faizan Ahmed Raza**