

# MUHAMMAD AHMED AFZAL

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## PROFESSIONAL SUMMARY

Detail-oriented IT Specialist with a robust background in managing and supporting computer systems, networks, and software applications. Proven track record in troubleshooting, system updates, and data backups, ensuring seamless technology operations while enhancing cybersecurity measures. Adept at implementing new technologies and improving system performance, I am eager to contribute my technical expertise and problem-solving skills to drive efficiency and security in a dynamic environment.

## TECHNICAL SKILLS

IT Support • Technical Support • Troubleshooting • System Updates • Data Backups • Network Security • Cloud Platforms (AWS, Azure, Google Workspace) • Computer Systems • Operating Systems (Windows, macOS, Linux) • Communication • Problem-Solving • Teamwork • Attention to Detail • Prioritization • Python • PyTorch • FastAPI • Docker • Git • SQL

## PROFESSIONAL EXPERIENCE

**AI Engineer** | iTechGemini Pvt Ltd | Lahore, Pakistan

Sep 2025 – Present

- Built and deployed 5+ production AI APIs serving mobile applications with 99.7% uptime, integrating OpenRouter, Replicate, and Hugging Face models for real-time inference at scale.
- Engineered cloud-native microservices on GCP (Cloud Run, App Engine) optimizing for <200ms p99 latency while handling 50K+ daily API requests through auto-scaling and load balancing.
- Implemented MLOps pipelines including model versioning, A/B testing infrastructure, and Prometheus monitoring dashboards, reducing deployment cycles from 4 hours to 25 minutes.
- Optimized API performance through Redis caching, async request handling, and connection pooling achieving 3.2x throughput improvement and 40% cloud cost reduction.
- Developed multi-modal AI features spanning computer vision, NLP, and generative AI with fallback strategies and error handling.

**AI Engineer** | Automotive Artificial Intelligence (AAI) GmbH | Islamabad, Pakistan

Dec 2024 – Apr 2025

- Designed and deployed GoldenEYE—an ETL automation platform replacing manual data workflows, achieving 85% reduction in manual effort and enabling hourly data ingestion with zero downtime.
- Architected AWS RDS/EC2 MySQL infrastructure handling 100K+ records and 10K+ daily transactions with <50ms query latency through indexing optimization and connection pooling.
- Built real-time Python analytics dashboards with <300ms response time improving operational efficiency by 70% and enabling data-driven decision making across global teams.
- Implemented automated data validation pipelines using statistical anomaly detection improving data quality by 92% and reducing manual QA overhead.
- Established monitoring and alerting systems ensuring 99.9% platform availability.

**AI Engineer** | Freelance / Contract | Islamabad, Pakistan

Apr 2025 – Sep 2025

- Enhanced 3DmolFormer transformer model with multi-objective RL for protein-ligand binding prediction, achieving 18% improvement in binding affinity MAE (1.42 → 1.16 kcal/mol) and 0.89 ROC-AUC on PDBbind benchmark.
- Built full-stack luxury booking platform with React/Node.js/PostgreSQL featuring GPT-4 chatbot and ML recommendation engine, deployed on AWS with 99.9% availability serving 1K+ bookings.
- Developed Flutter sports social app with ML matchmaking algorithms and real-time Firebase integration, successfully launched on Play Store with 500+ active users.

**Research Assistant** | COMSATS University Islamabad | Islamabad, Pakistan

Sep 2022 – Jul 2023

- Conducted NLP research on transformer models (BERT, GPT-2) for sentiment analysis achieving 15% accuracy improvement through fine-tuning and hyperparameter optimization.
- Developed CNN architectures for medical image classification reaching 92% accuracy and 0.91 F1-score on benchmark datasets.
- Co-authored research on scalable deep learning architectures bridging academic innovation with production deployment.

## EDUCATION

**Master of Science in Artificial Intelligence** - COMSATS University Islamabad (Feb 2024 – Jan 2026)

GPA: 3.50/4.00

**Bachelor of Science in Bioinformatics** - COMSATS University Islamabad (Sep 2019 – Jul 2023)

GPA: 2.82/4.00

## KEY PROJECTS

**3DMOLFORMER:** Advanced transformer architecture for 3D molecular representation learning in drug discovery with dual-channel attention mechanism.

**MolGAN:** Generative Adversarial Network for de novo molecular design using reinforcement learning reward shaping.

**Translation AI API:** Production FastAPI service supporting 50+ languages with async handling, rate limiting, and <500ms inference time.

**AI LinkedIn Agent:** Automated networking bot using LLMs with RAG architecture for context-aware content generation.