

Syed Ali Tariq

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AI Consultant | Project Manager & Team Lead | PhD in Explainable AI | Deep Learning • Computer Vision • Generative AI • Cloud • MLOps

Personal Statement

AI Team Lead / Project Manager with a PhD in Explainable and 8+ years of experience guiding AI initiatives from research to production. PhD in Explainable AI with 10+ publications in leading journals, specializing in Deep Learning, Computer Vision, and Generative AI. Skilled in AWS cloud deployment, MLOps, and scalable AI system design, with strengths in problem-solving, solution development, and system optimization. Experienced in team leadership, project management, and mentoring, consistently turning complex AI challenges into scalable, high-performance applications. Now focused on leading AI strategy, innovation, and enterprise-scale adoption to deliver measurable business impact.

Expertise

- **Computer Vision:** Artificial intelligence, explainable AI, deep learning, machine learning. Transformers and CNN-based model development for classification, segmentation, and detection tasks.
- **Generative AI:** Question-answering chatbots via RAG pipelines, SQL generation, and QA from CSV files or databases. Image inpainting and enhancement, GANs.
- **Data engineering & analytics:** Data exploration, cleaning, feature engineering, visualization.
- **MLOps & Cloud:** AWS - EC2, Lambda, CICD, ECS, ECR, S3, Bedrock, Sagemaker. Dockerized deployments, FastAPI/Flask APIs, scalable ML pipelines. MLFlow for lifecycle management.
- **Google APIs:** Expertise in location-based services using Google Street View, Maps, and Places APIs.
- **Video compression:** Efficient video compression using HEVC/H.265, MV-HEVC, and VVC.
- **Tech stack:** Python, Tensorflow, Pytorch, Fast & Flask APIs, OpenMMLab, LangChain, MySQL.

Education

Doctor of Philosophy (Computer Science), COMSATS University, Islamabad, Pakistan **2019 – 2025**

- Area of specialization: *Explainable Artificial Intelligence (XAI)*
- Research advanced transparency, explainability and interpretability of CNNs for high-risk domains using counterfactual and contrastive reasoning. Applications in model transparency, reliability, and trustworthy AI.

Master of Science (Computer Science) Abasyn University, Islamabad, Pakistan **2014 – 2017**

- CGPA of 3.87 out of 4.0 (**Gold Medalist**). Thesis Title: *Palmprint matching using GPU*

Work Experience

Artificial Intelligence Engineers Team Lead **May 2023 – Present**
[SwipBox Pakistan Pvt. Ltd., Islamabad, Pakistan](#)

- Lead the AI engineering team, managing development processes, infrastructure, and sprint planning through **Agile workflows (Jira/Confluence)**.
- **Led audit readiness for AI systems**, including preparation and successful handling of **ISO 9001 quality audit** and a **technical audit of the AI department**, ensuring alignment with governance, documentation, and compliance standards.
- Designed and implemented **AI governance practices** covering experiment tracking, version control, reproducibility, and risk assessment to meet internal and external audit requirements.
- **Led development of utilization predictor and capacity forecasting tools**, improving locker network efficiency and enabling data-driven expansion planning.
- **Developed a Network Optimizer** tool identifying under- and overutilized parcel lockers, rebalancing network capacity, and improving demand forecasting for strategic logistics planning.

- Designed and deployed AI-powered chatbots, including a **RAG**-based customer support assistant (reducing manual workload and improving response time) and a **SQL-generating** assistant for natural language database queries.
- Built a **CloudWatch logs analysis** and summarization tool, enabling proactive **system health monitoring** and automated alerts for faster incident response.
- Oversaw code reviews, task evaluations, and quality assurance to ensure scalable, production-ready AI solutions.
- **Created a QR code enhancement tool** to restore damaged or low-quality QR codes, improving customer scanning reliability.

Artificial Intelligence Engineer

Feb 2023 – Apr 2023

[SwipBox Pakistan Pvt. Ltd., Islamabad, Pakistan](#)

- Built a location generator tool using **Google Maps/Places APIs** with image classification, segmentation, and detection models to identify ideal locker placements.
- Trained and **optimized** deep learning models for classification, detection, and segmentation tasks.
- Performed data extraction and validation to improve model performance and quality.
- Models testing and **evaluation** with the incorporation of **explainable AI** techniques.
- Developed **testing tool** for efficient model analysis and comparison with different versions.
- Developed models **postprocessing** techniques to improve accuracy.
- Improved and augmented training datasets with **image inpainting**.

Computer Vision Engineer

May 2022 – Jan 2023

House of Technology Pvt. Ltd., Islamabad, Pakistan

- Worked on several computer vision projects and writing **research proposals**.
- 360° virtual reality (VR) video compression using **Versatile Video Coding (VVC/H.266)**.
- Worked on DL and deep reinforcement learning (DRL)-based methods for effective video compression.

Research Associate

Apr 2019 – Apr 2022

Medical Imaging and Diagnostics Lab (MID), NCAI, COMSATS University, Islamabad.

- Developed state-of-the-art DL models for TB and COVID-19 detection using chest X-rays and CT scans.
- Currently hold the first position worldwide on TBX11K competition leaderboard: <https://competitions.codalab.org/competitions/25848#results>.
- Developed a Pulmonary Diagnostic System (PDS) for lung disease detection and deployed it to MS Azure cloud.
- Performed fieldwork to gather medical datasets from local laboratories and healthcare institutions.
- Worked on development of web-based tuberculosis identification system using Python/Django framework, authored journal papers, and supervised MS students.

Research Assistant/Software Design Engineer

May 2016 – Mar 2019

House of Technology Pvt. Ltd., Islamabad, Pakistan.

- Worked on research projects including tuberculosis identification, surgical telementoring system using HEVC, fingerprint classification, face recognition, and palmprint/fingerprint identification using parallel GPU programming (Nvidia CUDA). Light Field compression using HEVC and MV-HEVC.
- iOS chat app and auto parts app development. MS Excel reports using VBA and SQL.

Research Activities

Total 15+ publications with 400+ citations. Full list available via [Google Scholar link](#).

- **Explainable AI (XAI):** 2 publications (Knowledge-Based Systems, 2022 & 2024)
- **Deep Learning & Classification:** 6 publications (incl. IEEE Transactions on Cybernetics, IEEE Access)
- **Medical Imaging:** 3 publications (e.g., Journal of Digital Imaging, 2022)
- **Segmentation & Video Compression:** 4 publications (IEEE Access, Journal of Medical Imaging, etc.)
- **Parallel Programming & Biometrics:** 4 publications (Cluster Computing, IET Image Processing, Journal of Parallel and Distributed Computing)