



Shahzad Ahmad

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● ABOUT ME

I am an aspiring researcher in **Artificial Intelligence and Data Science** with a strong foundation in **machine learning, deep learning, and recommender systems**. I hold an **MS in Data Science (FAST NUCES, CGPA 3.33/4.0)**, where my thesis focused on developing AI-driven recommendation systems for personalized literature discovery. My research interests include **intelligent information retrieval, scalable deep learning models, Computer Vision, and knowledge discovery systems**. With hands-on experience in **Python, PyTorch, Azure, AWS, and Databricks**, I aim to pursue a **PhD** that bridges applied machine learning and theoretical AI to develop impactful, data-driven innovations.

● RESEARCH INTERESTS

Research Interests

- Artificial Intelligence and Machine Learning
- Deep Learning and Neural Network Optimization
- Recommender Systems and Intelligent Information Retrieval
- Natural Language Processing and Knowledge Graphs
- Big Data Analytics and Cloud-based AI Systems
- AI Ethics, Interpretability, and Responsible Machine Learning

● EDUCATION AND TRAINING

20/08/2023 – 07/05/2025 Islamabad, Pakistan

MS DATA SCIENCE FAST NUCES ISB

1. Designed and implemented an AI-driven recommender system using NLP and collaborative filtering for personalized literature retrieval.
2. Integrated deep learning methods for document similarity and ranking improvement

Website <http://isb.nu.edu.pk/> | **Final grade** A | **Level in EQF** EQF level 7 | **National classification** 7 |

Thesis Toward Efficient Literature Discovery – Exploring Recommender Systems for Personalized Research Assistance

17/09/2013 – 16/09/2017 Rawalpindi, Pakistan

BACHELOR OF SCIENCE IN COMPUTER SCIENCE PMAS UAAR RWP

Website <https://www.uaar.edu.pk/index.php> | **Level in EQF** EQF level 7

● WORK EXPERIENCE

ASSISTANT DIRECTOR(CLOUD COMPUTING & BIG DATA) – GIS LAB – 11/03/2026 – Current – LAHORE, PAKISTAN

1. Manage and maintain 4 production servers (AWS, VPS, Hetzen Cloud, Cloudflare R2), handling end-to-end deployment of new incoming projects as well as ongoing maintenance of ~30 active deployments, including Android apps, Node.js backends, and frontend applications.
2. Built end-to-end CI/CD automation pipelines using GitHub Actions, GitLab CI/CD, Jenkins, Terraform, and Ansible, reducing deployment time by 80%.
3. Serve as the primary technical point of contact for a cross-functional development team of 15–17 engineers (backend, frontend, database), resolving infrastructure and deployment issues across all projects.
4. Configure and manage web/app infrastructure: Nginx, Apache, Docker containerization, PostgreSQL administration
5. Implement network security measures, including IP whitelisting, IP blocking, and firewall configuration; enforce access control and data protection best practices across cloud infrastructure.

6. Handle domain management, DNS, SSL provisioning, and backup/disaster recovery for all hosted systems.
7. Implement Infrastructure-as-Code (IaC) practices using Terraform and Ansible for consistent, repeatable deployments.

RESEARCH DATA SCIENTIST / DATA ENGINEER – SERANA AI INC – 01/07/2025 – 09/2025 – VANCOUVER (REMOTE), CANADA

1. Conducting applied research on **AI-driven forecasting and automation models**.
2. Collaborating on the design of scalable **machine learning architectures** and predictive analytics tools.
3. Preparing research manuscripts and reports for academic and industrial audiences.
4. Applying **Python, PyTorch, and Azure ML** for model experimentation and deployment.

DATA SCIENCE AND ENGINEERING ASSOCIATE – ARBOB TECH TEAM – 01/09/2023 – 30/06/2025 – PAKISTAN

1. Managed cross-functional tasks across data science, data engineering, analytics, and technical support
2. Built and maintained data pipelines
3. Performed data analysis and generated insights
4. Supported machine learning workflows
5. Resolved technical issues efficiently
6. Collaborated with cross-functional teams to improve data quality and system performance
7. Enhanced overall operational reliability
8. Conducted data preprocessing and research
9. Prepared analytical reports for decision-making
10. Troubleshoot complex problems and delivered practical solutions

DATA ENGINEERING – SOLUTYICS – 21/07/2021 – 25/08/2023 – LAHORE, PAKISTAN

1. Developed **data engineering solutions** supporting AI and predictive analytics initiatives.
2. Implemented **data validation frameworks** to ensure 99% data quality across analytics systems.
3. Collaborated with data science teams to enable **real-time data streaming and model training** in Databricks.

FREELANCE DATA ANALYST / RESEARCH CONSULTANT – FIVERR – 03/02/2019 – Current – REMOTE, PAKISTAN

1. Delivered 60+ analytical projects for global clients involving **data cleaning, visualization, and forecasting**.
2. Designed **custom ML-based dashboards** using Python, SQL, and Power BI.
3. Assisted startups and researchers in **data preparation for publications and prototypes**.
4. Experienced in **data engineering, data science, deep learning, and computer vision projects**, including model development, training, and deployment.

● ONLINE COURSES

03/06/2023 – 03/07/2023

Microsoft Azure Data Engineering Associate (DP-203) Professional Certificate

Link <https://www.coursera.org/>

07/08/2023 – 08/08/2023

Advanced Machine Learning

Link <https://www.coursera.org/>

07/01/2022 – 30/10/2022

COMMUNICATION AND SOFT SKILLS

Link digiskills.pk

01/10/2022 – 30/10/2022

Deep Learning with PyTorch : Generative Adversarial Network

Link <https://www.coursera.org/>

● **LANGUAGE SKILLS**

Mother tongue(s): **URDU**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **SKILLS**

data analyst | data engineering | data science | python | machine learning | My-SQL | Azure and AWS | Design and implementation of ETL pipelines | ETL Processing | Big Data | Hadoop - Spark - HDFS (Base) | Apache Kafka (Base) | Apache Hadoop, Spark (development and operations) | ETL: Airflow | AWS Services(S3,EC2,Lambda,Redshift,RDS,Aurora..) | Microsoft Office | Docker | Git | SQL | Looker / Google Big Query | MLDL libraries PyTorch Numpy Pandas Scikit-learn Matplotlib | Torch, Keras, Tensorflow, Matplotlib, Numpy, Scikit-learn | Computer Vision(Open CV)

● **PROJECTS**

07/06/2024 – 28/07/2024

End-to-End Data Engineering and AI Pipeline on Azure

- 1. Designed and deployed a scalable data pipeline for structured and unstructured data sources.
- 2. Improved data retrieval efficiency by **40%** through workflow automation and query optimization
- 3. Utilized **Azure Data Factory, Databricks, and PySpark** for model integration and monitoring.

05/11/2023 – 10/01/2024

Student Performance Analytics

- 1. Implemented and trained **GAN models** for synthetic data generation using **PyTorch**.
- 2. Explored applications in data augmentation and visual synthesis.

13/01/2023 – 31/01/2023

Predictive Customer Churn Model

- 1. Developed a machine learning model achieving **85% accuracy** in churn prediction.
- 2. Applied **feature engineering** and **ensemble learning** to improve performance metrics.
- 3. Demonstrated model interpretability using SHAP analysis.

● **DRIVING LICENCE**

Driving Licence: A	09/04/2024 – 09/04/2025
Driving Licence: B	09/04/2024 – 09/04/2025

● **HOBBIES AND INTERESTS**

Book Reading, Cricket, Running, playing games

● **HONOURS AND AWARDS**

03/02/2017

Award of PM laptop – PMAS UAAR RWP

30/11/2017

Web Design and Development – PBTE/PSDF

01/08/2018

Technical Skills – Govt of Punjab (E-Rozgaar)

● **PUBLICATIONS**

2026
[Recommender Systems for Improving Personalised Research Assistance and Literature Discovery](#)

This research article presents a novel framework called **SemanticRec** designed to enhance personalised research assistance and academic literature discovery. The study addresses key limitations in existing recommender systems, such as reliance on keyword matching and lack of contextual understanding. The proposed system integrates traditional similarity measures like cosine similarity and Jaccard similarity with contextual semantic embeddings using SciBERT. It is evaluated on large-scale datasets including DBLP and ACM records to ensure robustness and generalizability. The results demonstrate significant improvements in retrieval performance, with notable increases in precision and F1-scores, indicating better contextual relevance and efficiency in academic search systems.

Ahmad, S., Muhammad, A., Abbas, M. S., & Jan, S. U. (2026). Recommender Systems for Improving Personalised Research Assistance and Literature Discovery. Engineering Reports. <https://doi.org/10.1002/eng2.70714>

Authors: Shahzad Ahmad, Asif Muhammad, Muhammad Sohail Abbas, Sana Ullah Jan | **Journal Name:** Engineering Reports | **Publisher:** Wiley

● **RECOMMENDATIONS**

Dr. Asif Muhammad Assistant Professor

It is the great enthusiasm that I recommend Shahzad Ahmad

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Sohail Abbas Lecturer

I am pleased to recommend Shahzad Ahmad for the Ph.D. position in Health Science, Technology, and Management. I had the opportunity to work with him on research focused on recommended systems for scientific papers at FAST National University of Computer and Emerging Sciences, Islamabad. During this work, he displayed remarkable research skills, a solid grasp of machine learning concepts, and an impressive ability to analyze complex problems. His contributions led to a research paper, which is currently under review in a reputable journal.

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