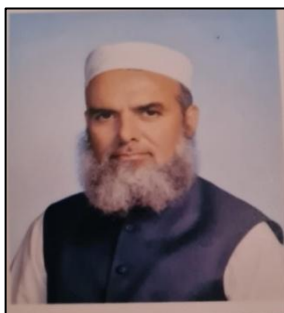


Dr. Waqar Ishaq

Machine Learning Specialist



📍 Work: Telecommunication Department, Hazara University, Mansehra, Pakistan

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About

Experienced data scientist | researcher | academician and project supervisor with expertise guiding different teams to model and deliver profitable and impactful results. An accomplished academician and researcher with over 18 years of experience in areas of **Machine Learning, Data Analytics, Artificial Neural Networks Data Science, Satellite and Digital Communication with Networking**. As machine learning expert, transform and analyze complex information using advanced statistical, algebraic and other analytical techniques to successfully identify relationships and building solutions. Moreover, developed data driven conceptual models, dash boarding and provide analytical problem solutions.

Place of Birth

Mansehra, Pakistan

Nationality

Pakistani

Technical Skills

Machine & Deep Learning

Multi-variate
Statistical & Linear

Natural Language
Processing

Text Mining & Pattern
Recognition

Big Data Analytics &
its tools

Data Warehousing &
Data Mining

End to end Data

Python, Tableau & R

Education

➤ **PhD, Computer Engineering Department, Kadir Has University, Istanbul, Türkiye August**

2014 – August 2021

- Field(s) of study: Machine learning, Deep Learning, Collaborative clustering, Natural language processing and Image Processing.
- Carry out both quantitative and qualitative analyses discover patterns for supervised (K-NN, Decision Tree, Naive Bayesian, MLR etc.) and unsupervised learning (K-means, K-Medoid, SOM etc.).
- PhD Dissertation: "Capturing the data similarity among the organizations of same nature". ORCID: <https://orcid.org/0000-0002-3680-1438>

➤ **MS, Telecommunications Department, George Mason University, Fairfax, VA, U.S.A**

August 2000 - May 2003

➤ **B.Sc (Civil Engineering) University of Engineering and Technology, Peshawar, Pakistan**

August 1994 – May 1999

Professional Experience

Soft Skills

Leadership & Teamwork

Conflict Resolution

Critical thinking &
Problem Solving

Flexibility & Adaptability

Effective Time
Management

Ability to Work under
Pressure

Ability to Multitask

➤ **HoD/ Assistant Professor Telecommunication Department, Hazara University, Mansehra, KPK, Pakistan** May 2010 - Present

- Designed new programs to present in the Board of Studies
- Member Board of Faculty
- Certified Program Evaluator of National Technology Council Pakistan
- Heading NLP & Computer Vision research group and supervising both graduate and undergraduate students
- Initiating co-curricular and non-curricular activities to enhance students' social communication skills and physical growth
- Teaching undergraduate and graduate level courses.
- In charge MS program, supervising graduate level semester courses and research projects.

➤ **Assistant Professor, Comsats Institute of Information Technology, Wah, Punjab, Pakistan**

Sept. 2005 – May 2010

- Performed teaching and research activities.
- As an in charge, managed the telecommunication engineering program.
- Accredited the telecommunication engineering program with Pakistan Engineering Council (PEC).

➤ **Adjunct Professor, Military College Signals, Rawalpindi, Pakistan**
Feb. 2007 – June 2007

- Besides teaching graduate students, identified research opportunities for students, assisting with gathering data and drawing conclusions for projects.
- Built strong rapport with students through class discussions and academic advisement.

➤ **Graduate Teaching Assistant (GTA), George Mason University, Fairfax, VA, U.S.A**

Aug. 2003 – May 2005

- Conducted recitation classes and helping students in their projects at graduate level
- Proctored tests, graded quizzes and assignments according to the university standards.
- Worked with the professors in evaluating student progress needs and gains.

➤ **Front Desk Representative, George Mason University, Fairfax, VA, U.S.A**

Aug. 2001 – May 2003

- Provided customer and technical assistance to students for media devices such as digital still camera, video camera, Apple Macintosh, analog multimedia editing workstations.
- Maintained general operations and ensured the integrity of the facility.

- **Assistant Engineer, IMPREGELIO (Multinational Italian Construction Company) Dec. 1998 – Nov. 1999**
 - Responsible for managing thirty workers, tested, analyzed and selected different vendor products at precast yard.
 - Planned and managed project implementation schedules with daily progress reports.
 - Monitoring quality control, health and safety matters during construction.
- **Member Hazara University Administrative Committees**
 - Convener of Campus Management System Committee
 - Convener of University Science Exhibition Committee
 - Convener of University Flood Relief Committee (Rs. 1.5 million)

Projects

- **Health and Environmental management of Broiler Chicken Control Shed using Statistical Modeling**
 - Led a Business Process Management (BPM) framework for an end-to-end review of manual and automated processes resulting in multiple transformations that controls the cost by 9 % and increased the business profitability by 12 %, while ensuring the customer experience quality.
 - Used machine learning pipeline for statistical and linear modeling to manage broiler chicken health by increasing the feed conversion ratio (FCR) from 29.8 to 32.05.
- **Quality of interaction-based predictive model for support of online learning in pandemic situations**
 - Collected student data of the IT department, Hazara University to evaluate the students' quality of interaction (QoI) during Covid pandemic.
 - Deep learning methods are deployed to map different subjects results with number of times the students access the learning management system (LMS) to measure QoI. This improves the computational efficiency by 9.8%. Provided senior executives with analytics and risk management inputs for computational improvements and strategic user centric solutions to expand capabilities based on student feedback and expectations.
- **Capturing Similarity among Organizations of Same Nature using Machine Learning Techniques**
 - Vertical collaborative clustering using bit plane slicing technique identifies latent causes by sharing results with other data sites without sharing the actual data.

- This novel proposed model captures 95% similarity with test accuracy of 93% among various datasets having common features in distributed environment.
 - This technique compresses and visualizes high dimensional data in reduce space without compromising data confidentiality.
- **Free Space Optics project of Comsats institute of IT University**
- Link budget analysis for free space optical (FSO) communication in match to microwave communication.
 - Reduced the attenuation effect by 1.5 dB and improve the FSO link performance under the severe weather conditions.

Publications

1. Khanam S, Sharif M, Raza M, Ishaq W, Fayyaz M, et al. (2025) Anomaly recognition in surveillance based on feature optimizer using deep learning. PLOS ONE 20(5): e0313692. <https://doi.org/10.1371/journal.pone.0313692>
2. Kaleem, Zeeshan, Farooq Alam Orakzai, **Waqar Ishaq**, Kamran Latif, Jun Zhao, and Abbas Jamalipour. "Emerging Trends in UAVs: From Placement, Semantic Communications to Generative AI for Mission-Critical Networks." *IEEE Transactions on Consumer lectronics* (2024).
3. Mumtaz, F., Jehangiri, A.I., **Ishaq, W.** et al. Quality of interaction-based predictive model for support of online learning in pandemic situations. *Knowl Inf Syst* (2023).
4. Khan, M.S.; Shah, M.; Khan, A.; Aldweesh, A.; Ali, M.; Tag Eldin, E.; **Ishaq, W.**; Hussain, L. Improved Multi-Model Classification Technique for Sound Event Detection in Urban Environments. *Appl. Sci.* 2022, 12, 9907.
5. Khan A, Umar AI, Shirazi SH, **Ishaq W**, Shah M, Assam M, Mohamed A. QoS-Aware Cost Minimization Strategy for AMI Applications in Smart Grid Using Cloud Computing. *Sensors (Basel)*. 2022 Jun 30;22(13):4969. doi: 10.3390/s22134969. PMID: 35808459; PMCID: PMC9269858.
6. **ISHAQ W**, BUYUKKAYA E, ALI M, KHAN Z (2021) VCC-BPS: Vertical Collaborative Clustering using Bit Plane Slicing. *PLOS ONE Journal* 16(1): e0244691.
7. Saleem, Zahid , KHAN, NASRULAH , **Ishaq, Waqar** & Altaf, Muhammad. (2006). Free space optical (FSO) link design under diverse weather conditions. *WSEAS Transactions on Electronics*.
8. **Ishaq, Waqar** & Buyukkaya, Eliya. (2017). Dark patches in clustering. 806-811. 10.1109/UBMK.2017.8093535. Conference: 2017 International Conference on Computer Science and Engineering (UBMK)
9. Shehzad, Danish & Umar, Arif & Amin, Noor & Waqar Ishaq,. (2014). A Novel Mechanism for Detection of Sybil Attack in MANETs. 10.15242/IIE.E1014081. : International conference on Computer Science and Information Systems (ICIS'2014) Oct 17-18, 2014 Dubai (UAE).

10. Shehzad, Danish, **Ishaq, Waqar**, Khan, Zakir & Iqbal, Junaid. (2014). An Enhanced Weight Based Clustering Algorithm for Mobile Adhoc Networks. Conference: International conference on Computer Science and Information Systems Oct 17-18, 2014, Dubai (UAE).

➤ **Management And Leadership Skills**

- Member Hazara University Technical & Procurement Committee
- Member of Pakistan Engineering Council
- Member Hazara University departmental disciplinary committee and PhD students' thesis evaluation committee
- Accredited the Comsats University Telecommunication engineering program with Pakistan Engineering Council

➤ **Honors and Awards**

- Member of Pakistan Engineering Council Award
- Scholarship granted to support PhD studies Awarding institution: Kadir Has University Türkiye
- Graduate Teaching Assistantship Scholarship at School of IT and Engineering, Awarding Institution: George Mason University, VA, USA.
- Consider the Best TA at George Mason University, Fairfax, VA.

➤ **Courses Taught**

MSIT 755 Machine Learning	MSIT750 Data Mining
MSIT Advance Linear Algebra	MSTEL703 Info. theory & Coding
MSTEL701 Information Security	MSTEL702 Advance Net. Security
MSCS521 Advanced Networking	MSIT615 Advance Software Engg.
MSCS590 Data Visualization	MSCS595 Artificial Neural Net.
Tel343 Data Com & Computer Net.	CS 425 Big Data Analytics
EE 350 Optical Fiber Com.	CS 401 Cloud Computing

➤ **Recommendations**

1. Name: Dr. Feza Phone number: (+90) 2125336532 Email: kerestec@khas.edu.tr, Professor, Department of Computer Engineering, Kadir Has University, Istanbul, Turkiye
2. Name: Prof. Dr. Ghulam Mujtaba Shah, Phone number: (+92) 3439482925 Email: gmujtabashah@hu.edu.pk, Pro-Vice Chancellor Hazara University, Mansehra, KPK, Pakistan.
3. Name: Dr. Mahmoud Cavur, Phone number: (+90) 2125336532 Email: mahmutcavur@gmail.com Assistant Professor at Department of Management Information System, Kadir Has University, Istanbul, Turkiye