



Dr. Afreen Khan

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[Google Scholar Citation](#) | [ORCID](#) | Scopus ID: 57205026656 | Web of Science ID: D-8545-2017 |
[ResearchGate](#) | [LinkedIn](#)

PROFILE

- **PhD** in Computer Science with specialization in Machine Learning & Data Science from **Aligarh Muslim University**.
- Over **4 years of research experience** and **2.5 years of teaching experience**, including serving as a **Guest Instructor at Women's College, Aligarh Muslim University**.
- Currently an **Assistant Professor** with expertise in data science, machine learning, and healthcare informatics.

RESEARCH INTEREST:

- Data Science
- Machine Learning
- Deep Learning
- Natural Language Processing
- Large Language Model
- Big Data and Analytics
- Healthcare Informatics
- Genomic Data Science
- Public Health
- Blended Learning
- Analytics and e-learning
- Statistical Modeling

SUMMARY OF RESEARCH ACCOMPLISHMENT:

- Authored **20 research articles** in peer-reviewed international journals and conferences.
- Led a significant community-based research project on the **“Mental Health Impact of the COVID-19 Pandemic on the Rural Population: A Community Based Cross-Sectional Study from North India”**.
- Extensive experience as a Senior Research Associate at On My Own Technology Pvt. Ltd. and as a Research Associate at SoftNice India Pvt. Ltd.
- Actively serves on multiple institutional and scientific advisory boards and is a reviewer

- for numerous reputable journals and conferences.
- Completed the **Geospatial Data Science for Cancer Control and Prevention Certification from Harvard T.H. Chan School of Public Health in 2022.**
- As a past member of **TechX.AI**, led course design and training sessions in data science and machine learning.

PROFESSIONAL MEMBERSHIP:

- Member of IEEE Computer Society (since 2013).
- Member of IEEE Women in Engineering (since 2013).
- Member of IAENG (since 2019).

COURSE TAUGHT:

- Computer Fundamentals and C Programming
- Python Programming Language
- Data Science
- Cyber Security Analytics
- Big Data Visualization
- Machine Learning with Python
- Internet of Things
- Data Analytics and Visualization
- Blockchain Computing
- Image Processing
- Research Methodology

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

- Women Grievance Redressal Cell – Convener
- Departmental Placement Committee (UG) – Convener
- Innovative Teaching, Learning & Research Committee - Member Secretary
- Departmental Quality Assurance Cell (DQAC) - Criteria-V, Student Support & Progression - Criteria member
- Accreditation & Ranking Committee (ARC) - Member
- Curriculum Review and Development Committee (CRDC) - Member
- Departmental Examination Committee (Theory) - Member
- Student Project Monitoring & Evaluation Committee - Member
- Proctorial Member
- National Assessment and Accreditation Council (NAAC), Role: Teaching, Learning, and Evaluation, Department of Computer Application, Integral University, India, 10/2022 – 03/2023.
- Member of Conference Committee

STUDENTS SUPERVISION

<u>Level</u>	<u>Number of Trainees</u>
• PhD Students	1
• Master Students	9
• Undergraduate Students	10

PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

- **Khan, A.** et. al. "ADNeuroNet: A Neuroevolution-based Neural Network Algorithm for the Diagnosis of Neurodegenerative diseases,". *Neural Computing and Applications*, 2024, (Provisionally accepted). [Indexing: SCIE, Scopus] [IF: 4.5]
- **Khan, A.** et. al. "Development of a Robust Parallel and Multi-Composite Machine Learning Model for Improved Diagnosis of Alzheimer's Disease: Correlation with Dementia-Associated Drug Usage and AT(N) Protein Biomarker,". *Front. Neurol.*, 2024. doi: 10.3389/fnins.2024.1391465. [Indexing: SCIE, Scopus] [IF: 3.2]
- Parvez S, Zubair S, **Khan A.** (2023) A Hybrid Approach for Weak Learners Utilizing Ensemble Technique for Alzheimer's Disease Prognosis. *Indian Journal of Science and Technology*. 16(32): 2518-2533. <https://doi.org/10.17485/IJST/v16i32.1007>. [Indexing: WoS]
- **Khan, A.** and Zubair, S. "Development of a Three Tiered Cognitive Hybrid Machine Learning Algorithm for Effective Diagnosis of Alzheimer's Disease," *J. King Saud Univ. - Comput. Inf. Sci.*, July (2022). [Indexing: SCIE, Scopus] [IF: 8.839]
- **A. Khan,** S. Zubair, and S. Khan, "A systematic analysis of assorted machine learning classifiers to assess their potential in accurate prediction of dementia", *Arab Gulf Journal of Scientific Research*, July (2022). [Indexing: SCI, Scopus]
- **Khan, A.,** S. Zubair, N. Khaliq and S. Khan, "An exploratory study to find the early trend and pattern recognition of Covid-19 infection in India: A Severity model based prediction", *Indian Journal of Community Health*, June (2021). [Indexing: Scopus, ESCI] [IF: 0.24] [SCImago Journal Rank (SJR): 0.15]
- **Khan, A.,** S. Zubair and S. Khan, "Comprehensive Performance Analysis of Neurodegenerative disease Incidence in the Females of 60-96 year Age Group", *Advances in Distributed Computing and Artificial Intelligence Journal*, March (2021). [Indexing: ESCI]
- **Khan, A.** and Zubair, S. "An Improved Multi-Modal based Machine Learning Approach for the Prognosis of Alzheimer's Disease", *J. King Saud Univ. - Comput. Inf. Sci.*, April (2020). [Indexing: SCIE, Scopus] [IF: 8.839]
- **Khan, A.** and Zubair, S. "Longitudinal Magnetic Resonance Imaging as a Potential Correlate in the Diagnosis of Alzheimer Disease: Exploratory Data Analysis", *JMIR Biomed. Eng.*, vol. 5, no. 1, pp. 1–13, April (2020). [Indexing: SCIE, Scopus] [IF: 5.43]
- **Khan, A.** and Zubair, S. "Usage of Random Forest Ensemble Classifier based Imputation and its potential in the diagnosis of Alzheimer's Disease", *International Journal of Scientific and Technology Research*, Vol. 8, Issue 12 December (2019). [Indexing: Scopus] [SJR: 0.123]

PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

- **Khan, A.** "Nilearn-based Multimodal Fusion Analysis for Integrating Brain Image Analysis," 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT), Delhi, India, 2023, pp. 1-5, doi: 10.1109/ICCCNT56998.2023.10308336.
- **Khan, A.,** S. Zubair, and S. Khan, "An Epidemiological-based Regression Analysis of Alzheimer's disease and Mild Cognitive Impairment Converts in the Female Population" in *IEEE EUROCON-2021 - 19th International Conference on Smart Technologies*, Lviv, Ukraine, July (2021). [Indexing: IEEE Xplore- Scopus]
- **Khan, A.,** S. Zubair and S. Khan, "Prospectives of Big Data Analytics and Explainable Machine Learning in Identification of Probable Biomarkers of Alzheimer's disease", *Manchester Journal of Artificial Intelligence & Applied Sciences*, April (2021). [Indexing: In process]
- **Khan, A.** and S. Zubair, "A Machine Learning Based Robust Approach to Identify Dementia Progression Employing Dimensionality Reduction in Cross Sectional MRI Data" in *The First*

International Conference of Smart Systems and Emerging Technologies, Prince Sultan University, Riyadh, Saudi Arabia, November (2020). [Indexing: IEEE Xplore- Scopus]

- **Khan, A.** and S. Zubair, “Expansion of Regularized Kmeans Discretization Machine Learning Approach in Prognosis of Dementia Progression” in The Eleventh International Conference on Computing, Communication and Networking Technologies, Indian Institute of Technology, Kharagpur, West Bengal, India, July (2020). [Indexing: IEEE Xplore- Scopus]
- **Khan, A.** and S. Zubair and M. Al Sabri, “An Improved Pre-processing Machine Learning Approach for Cross-Sectional MR Imaging of Demented Older Adults”, in The First International Conference of Intelligent Computing and Engineering (ICOICE-2019), Hadhramout University, Yemen, December (2019). [Indexing: IEEE Xplore- Scopus]
- **Khan, A.**, Vakil, M. K., & Bin Arif, M. S. (2018). Proposed 4SM Model for Indian Education System Implementing Big Data Analytics and Blended Learning Methods. In IEEE 2018 3rd International Conference for Convergence in Technology (I2CT), Pune, India. (2018) [Indexing: IEEE Xplore- Scopus]
- **Khan, A.** and M. U. Bokhari, “Data Science in Action : Key to Cybersecurity,” in IEEE 5th International Conference on “Computing for Sustainable Global Development,” (2018). [Indexing: IEEE Xplore- Scopus]
- M.U. Bokhari and **Khan, A.**, “Critical Review on Threat Model of Various NoSQL Databases,” in IEEE 4th International Conference on “Computing for Sustainable Global Development”, 01st - 03rd March (2017). [Indexing: IEEE Xplore- Scopus]
- **Other Publications (Symposium): Khan, A.** and S. Zubair, “An Improved Model on Climate Change and its Impact on Health employing Machine Learning Methods,” in National Symposium on Biodiversity and Sustainable Development, Department of Zoology, Aligarh Muslim University, November 2019.

PUBLISHED NON-SCI-SCOPUS BUT PEER REVIEWED RESEARCH PAPERS

- Zubair, S., Al Sabri, M., & **Khan, A.** “Correlation among Similarity Measurements for Collaborative Filtering Techniques: An Improved Similarity Metric”, Journal of Analysis and Computation (JAC). June (2019). [Indexing: DOAJ] [Scientific Journal Impact Factor (SJIF): 7.113]
- **Khan, A.** and Zubair, S. "Machine Learning Tools and Toolkits in the Exploration of Big Data", International Journal of Computer Sciences and Engineering, vol. 6, no. 12, pp. 570-575, 2018. Available: 10.26438/ijcse/v6i12.570575. December (2018). [Indexing: ICI, ESCI (in process)] [International Accreditation and Research Council (IARC): 3.802]
- M. U. Bokhari and **Khan, A.** “The NoSQL Movement,” IOSR J. Comput. Eng. Ver. IV, vol. 18, no. 6, pp. 2278–661. (2016). [Indexing: EBSCO] [IF: 0.889]

BOOK EDITED/ AUTHORED

- In Press

BOOK CHAPTERS

- Vakil, M.K., **Khan, A.**, Rahman, A. (2022). Analysing the Academic Performance of Students Under Varying Climatic Conditions. In: Muzammil, M., Khan, A.A., Hasan, F. (eds) Ergonomics for Improved Productivity. HWWE 2021. Design Science and Innovation. Springer, Singapore. https://doi.org/10.1007/978-981-16-2229-8_28.