Mudasar Hayat

Curriculum Vitae

Objective

Dedicated educator and researcher with a strong foundation in Mathematics, Artificial Intelligence, and Data Science. Experienced in mentoring students across academic levels, with practical expertise in Python, Machine Learning, and MATLAB. Passionate about mathematical modeling, statistical analysis, and AI-powered solutions. Seeking a role to contribute to academic excellence and impactful research in AI and applied mathematics.

Education

2022-24 **MS (Mathematics)**, *COMSATS University Islamabad*, Islamabad 44000, Pakistan,

2015-19 **BS (Mathematics)**, *University of Education*, Lahore, Pakistan,

2013-15 **F.Sc (Pre-Engineering)**, *Punjab Group of Colleges*, Sargodha, Pakistan,

2010-12 **Matric (Science Group)**, *Jauhar Misali Public School Khushab*, Khushab, Pakistan,

MS Thesis

Title *A Machine Learning Approach for Prediction of Heart Disease using Ensemble Learning Techniques.*

Abstract *Heart disease (HD) is a leading global cause of death, while Machine Learning (ML) playing a crucial role in its diagnosis. However, achieving both high accuracy and model interpretability remains a challenge. This study introduces three ensemble approaches—stacking, blending, and voting—to enhance HD prediction. Evaluated using seven performance metrics, the proposed models outperformed individual classifiers, achieving* ***89.1% accuracy****,* ***89.6% precision****, and* ***88.7% recall****. These results demonstrate the effectiveness of ensemble learning in improving HD detection, enabling early intervention and reducing the healthcare burden.*

Keywords *Adaptive Boosting, Boosting, Blending, Boltzmann Machine, Ensemble Learning, Gradient Boosting, Nearest Neighbors, Regularization, Perceptron, Ridge Classifier, Stacking, Validation.*

Supervisor Prof. Dr. Nadeem Javaid

Co_Supervisor Dr. Amna Nazeer

BS Final Year Project

Title *Numerical Solution of System of Linear Equations using Jacobi and Gauss Seidel Methods.*

Abstract *Numerical methods for solving systems of linear equations are essential in science and engineering. This project explores the Jacobi and Gauss-Seidel methods, two classical iterative techniques for approximating solutions. We provide a thorough analysis of their theoretical foundations, convergence properties, and practical considerations. Through theoretical derivations, we demonstrate the efficiency and convergence behavior of both methods. Additionally, we discuss their strengths, limitations, and scenarios where one method may be preferred over the other.*

Keywords *Gauss-Seidel, Iterations, Jacobi, Linear Equations, Numerical Solutions*

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Publications

Journals

[1] Mudasar Hayat, Nadeem Javaid, and Amna Nazeer, "A Machine Learning Approach for Prediction of Heart Disease using Ensemble Learning Techniques." *Submitted to Journal of Biomedical Informatics*, 2024.

[2] Mudasar Hayat, Nadeem Javaid & Amna Nazeer, "An Accurate and Efficient Machine Learning Stacked Ensemble Model for Heart Disease Prediction." *Submitted in Journal of Cardiology*, 2024.

Research Interest

Domain Artificial Intelligence, Mathematical Modeling, Healthcare, Data Science, Machine Learning.

Skills

Programming	Python, MATLAB, LaTeX
Data Science	Machine Learning, Data Analysis, Ensemble Learning, Data Visualization
Mathematics	Linear Algebra, Calculus, Probability, Discrete Structures, Optimization
Soft Skills	Teamwork, Public Speaking, Academic Writing, Time Management
Tools & Libraries	Scikit-learn, Pandas, NumPy, Matplotlib, TensorFlow (Basic)

Research Experience

2022–2024 **Research Associate**, *COMSATS University Islamabad*, Islamabad, Pakistan
Worked on machine learning and data science projects in the Communication Over Sensors Lab. Focused on predictive modeling in healthcare applications.

Teaching Experience

2025–till date **Mathematics & Statistics Lecturer**
SKANS Accountancy College Islamabad, Islamabad 44000, Pakistan.
From June, 2025 to till date

2025–till date **Visiting Lecturer**
SZABIST University Islamabad, Islamabad 44000, Pakistan.
From Feb, 2025 to till date

2024–till date **Visiting Lecturer**
Federal Urdu University of Arts, Science and Technology Islamabad, Islamabad 44000, Pakistan.
From Feb, 2024 to till date

2024–2025 **Visiting Lecturer**
Iqra University Islamabad, Islamabad 44000, Pakistan.
From Feb, 2024 to Feb, 2025

2020–2022 **Head of Department, Mathematics**
Roots International School and Colleges, Islamabad 44000, Pakistan.
From August, 2020 to June, 2022

2019–2022 **Mathematics Lecturer**
Roots International School and Colleges, Islamabad 44000, Pakistan.
Worked as Lecturer for IGCSE, HSSC & SSC.
From July, 2019 to June, 2022

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2017–2019 **Mathematics Lecturer**
Jauhar Misali Public School, Khushab, Pakistan.
From Jan, 2017 to July, 2019

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Achievements

Best Teacher Award
Got Best Teacher Award from AFAQ Teachers Training Institute, Pakistan

References

Prof. Dr. Nadeem Javaid
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Associate Prof. Dr. Amna Nazeer
Department of Mathematics, COMSATS University Islamabad, Islamabad 44000, Pakistan.
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