# Nikhil Tiwary

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## Professional Summary

Aspiring Data Science and Machine Learning Engineer with strong knowledge of Python, Machine Learning, and Deep Learning. Skilled in data analysis, predictive modeling, exploratory data analysis (EDA), and AI-driven problem solving. Passionate about building intelligent systems, analyzing complex datasets, and applying data science techniques to solve real-world problems through research and innovation.

## Education

**Bachelor of Technology (B.Tech) – Computer Science & Engineering (Data Science)** *2022 – 2026*
KCC Institute of Technology and Management, Greater Noida *Expected Graduation: 2026*

- **Specialization:** Data Science
- **Class 12 (CBSE):** 68% — **Class 10 (CBSE):** 75%

## Project Experience

**XAI-Driven Gradient Boosting Model for Cardiovascular Disease Prediction** *2025 – 2026*
*Research Project — Python, Gradient Boosting, Explainable AI, Pandas, NumPy, Matplotlib*

- Engineered an interpretable Gradient Boosting classifier achieving high predictive accuracy for cardiovascular disease risk, applying SHAP-based XAI techniques to surface top contributing clinical features and improve model transparency by over 40% compared to black-box baselines.
- Conducted end-to-end healthcare data pipeline including missing-value imputation, feature engineering, and class-imbalance handling, reducing data preprocessing errors and improving model robustness on unseen patient data.
- Presented findings at ICMCE-2026, an international conference organized in association with Springer, receiving a Certificate of Appreciation for outstanding contribution to Machine Learning and Explainable AI research.

**RandomForest-CVD-Prediction** *2024 – 2025*
*Machine Learning Project — Python, Scikit-learn, Pandas, NumPy, Matplotlib, Jupyter Notebook*

- Developed a Random Forest ensemble model for cardiovascular disease prediction, performing hyperparameter tuning via cross-validation to achieve optimized precision-recall balance across imbalanced clinical classes.
- Executed comprehensive EDA on multi-feature healthcare datasets, identifying 8+ statistically significant risk factors and reducing feature dimensionality by 25% through correlation analysis and feature importance ranking.
- Produced interpretable risk-assessment visualizations and analytical reports, translating model outputs into actionable healthcare insights for disease prevention and early intervention scenarios.

## Research Publications

**"XAI-Driven Gradient Boosting Model for Interpretable Cardiovascular Disease Prediction"**
*Second International Conference on Modern Trends in Computers and Electronics (ICMCE-2026)* *May 1–2, 2026*
*Organized by Dept. of CS&E and ECE, Faculty of Engineering, Teerthanker Mahaveer University, Moradabad – in association with* ***Springer*** — *Certificate S.No.: ICMCE2026/ID/363*

- Presented research on an interpretable Gradient Boosting model for cardiovascular disease prediction leveraging Explainable AI (XAI) techniques; awarded Certificate of Appreciation (S.No. ICMCE2026/ID/363) by the conference general chair.

**"Addressing Cardiovascular Health Disparities: From Modifiable Risks to Primary Care Interventions"**
*DOI: 10.64388/IREV9I6-1712914*

- Conducted data-driven analysis on cardiovascular healthcare disparities, modifiable risk factors, and evidence-based primary care interventions using healthcare analytics methodologies.

## Technical Skills

**Languages & Libraries:** Python, Jupyter Notebook, Github
**Machine Learning:** Gradient Boosting, Random Forest, Predictive Modeling, Feature Engineering, Cross-Validation, EDA
**Deep Learning:** Neural Networks, Deep Learning Fundamentals
**Tools & Platforms:** Git, GitHub

**Certifications:** AWS Solutions Architecture, Deloitte Data Analytics, Quantium Data Analytics, JPMorgan Software Engineering, GitHub Professional Certificate