Akash Deep Kumar

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Portfolio — GitHub — Live Application

Professional Summary

Final-year Computer Science Engineering student specializing in Machine Learning and Explainable AI with hands-on experience in building, deploying, and interpreting data-driven applications. Strong in Python, ML evaluation, and real-world project implementation.

Technical Skills

Languages: Python, C, C++
Machine Learning: Classification, Model Evaluation, Explainable AI (SHAP)
Tools: NumPy, Pandas, Scikit-learn, Streamlit, Git, GitHub
Databases: MySQL, SQL
Core Concepts: DSA, OOP, OS, DBMS

Certifications

Machine Learning Basics — Sungkyunkwan University (Coursera), Jan 2026

- Gained hands-on experience in data preprocessing, feature selection, and model training
- Implemented classification algorithms and evaluated performance using standard ML metrics
- Learned practical workflows for building and testing machine learning systems

Projects

Lymphography Disease Prediction — Python, KNN, Decision Tree, Random Forest, SHAP

- Built complete machine learning pipeline including data preprocessing, training, and evaluation for lymphography disease prediction
- Compared KNN, Decision Tree, and Random Forest models using stratified cross-validation for performance reliability
- Applied SHAP explainability techniques to interpret feature contributions and improve model transparency
- Assessed model performance using accuracy, precision, recall, and confusion matrix metrics

Daily Sugar Guidance Web Application — Python, Streamlit

- Developed and deployed real-time health guidance web application using Streamlit for blood sugar monitoring
- Implemented secure input validation, alerts, and rule-based recommendations for user safety
- Designed intuitive visual dashboards for easy understanding across different user literacy levels

Research & Publications

Explainable AI for Lymphography Prediction: A SHAP-Based Approach   IEEE Xplore, 2025

- Developed interpretable machine learning framework using SHAP for medical prediction
- Evaluated KNN, Decision Tree, and Random Forest models for comparative performance
- Enhanced transparency and reliability of AI-driven diagnosis

Education

B.Tech in Computer Science and Engineering — University of Engineering and Management, Jaipur   2022–2026
CGPA: 7.4   —   Class XII — 76% (2022)