Diwas Parashar

Machine Learning — Deep Learning — Data Analysis — Python

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Education

M.Sc. Artificial Intelligence & Data Analytics *August 2025 – Present*
Amity University, Noida

Bachelor's in Computer Applications *October 2021 – June 2024*
Bharati Vidyapeeth University, Pune CGPA: 6.9

Projects

Parkinson's Disease Severity Analysis *Python, Scikit-learn*

- Designed an end-to-end ML pipeline using 200+ biomedical voice samples to predict Parkinson's disease presence and severity.
- Engineered features and optimized models via cross-validation, improving prediction accuracy from 78% to 86%.
- Evaluated performance using RMSE (0.18) and confusion matrix, ensuring robust model validation.
- Compared multiple models (Logistic Regression, Random Forest, SVM) to select the best-performing approach.

Customer Churn Prediction with Explainability *XGBoost, SHAP*

- Built a churn prediction model on a dataset of 7,000+ customers, handling class imbalance using SMOTE.
- Achieved ROC-AUC score of 0.89 through feature engineering and hyperparameter tuning.
- Used SHAP values to identify key churn drivers, improving interpretability.
- Optimized decision thresholds to balance precision and recall for better business applicability.

AI-Based Predictive Maintenance System for Smart Manufacturing *Python, Time-Series ML*

- Developed a predictive model using simulated sensor data (10,000+ records) to forecast equipment failures.
- Applied time-series feature extraction and anomaly detection, achieving 84% failure prediction accuracy.
- Reduced simulated downtime by 25% through proactive maintenance recommendations.
- Implemented rolling window features and trend analysis to capture temporal degradation patterns.

Deep Learning Text Classification *TensorFlow / PyTorch*

- Built an LSTM-based text classifier on 20,000+ samples, capturing sequential dependencies in language data.
- Achieved 88% classification accuracy, outperforming traditional ML baselines by 10%.
- Implemented tokenization, padding, and embedding layers for efficient model training.
- Tuned hyperparameters (learning rate, batch size, epochs) to improve convergence and reduce overfitting.

Research Experience

A Decade Review of Sarcasm Detection in NLP (2015–2025)

- Conducted a systematic literature review of 50+ papers spanning traditional ML, deep learning, and transformer-based approaches.
- Developed a taxonomy of methods based on feature engineering, contextual modeling, and neural architectures, analyzing trends across datasets and evaluation metrics (F1-score, accuracy).
- Identified key research gaps including dataset bias, limited contextual understanding, and challenges in multilingual and cross-domain sarcasm detection.

Skills

Programming:	Python, SQL, Java, LaTeX
Machine Learning:	Regression, Classification, Model Evaluation, Feature Engineering
Data & Analytics:	Pandas, NumPy, Data Visualization, EDA
Tools:	Git, Firebase, APIs, Cloud Fundamentals
Soft Skills:	Problem Solving, Communication, Collaboration

Leadership & Achievements

- **President**, Music Society BVP Pune — Led a team of performers and organized large-scale events.
- **Secretary General**, TAFS Model United Nations 2020 — Directed conference planning and execution.
- **Co-Secretary General**, TAFS Model United Nations 2019 — Managed logistics and coordination.
- NCC Air Wing **'C' Certificate** Holder.

Languages

English (Fluent) Hindi (Fluent)