HEMANT JHA

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EDUCATION

Lakshmi Narain College Of Technology Nov-2021 – Jun-2025

Bachelor of Technology, Computer Science, CGPA-7.78

Courses: Operating System, Data Structures, Analysis and Algorithms, Database Management System, Computer Networks

SKILLS

Programming: Python, Data Structures and Algorithms, Object Oriented Programming

Machine Learning: Exploratory Data analysis, Feature Engineering, Regressions, Ensemble Learning

Deep Learning: Artificial Neural Networks, Convolution Neural Networks, Recurrent Neural Networks, GANs

EXPERIENCE

FORAGE MACHINE LEARNING VIRTUAL INTERNSHIP

- Gained comprehensive understanding of the entire Machine Learning development lifecycle, including the creation of data diagrams to illustrate workflow phases.
- Conducted Exploratory Data Analysis (EDA) on a dataset of 10000 records using Pandas, Matplotlib, and Seaborn to visualize data distributions, correlations, and trends, identifying significant patterns in job satisfaction, and departmental turnover rates.
- Developed a Random Forest Regressor with Scikit-learn to predict house prices, achieving an R^2 score of 0.90, effectively handling non-linear relationships and feature interactions.
- Applied cross-validation techniques, improving model robustness and generalizability, resulting in a 10% reduction in prediction error across different data subsets.

PROJECTS

TIME SERIES ESTIMATION

- Created a **LSTM**-based model to predict stock prices based on historical data, achieving a Mean Absolute Error (**MAE**) of **3%** on a test dataset.
- Built and trained the LSTM model using TensorFlow and Keras, optimizing hyperparameters such as the number of LSTM units, learning rate, and batch size to improve prediction accuracy.
- Executed a sliding window approach for sequence data processing and prediction, capturing temporal dependencies in stock price movements.
- Evaluated model performance using metrics such as MAE, Mean Squared Error (**MSE**), and Root Mean Squared Error (**RMSE**), ensuring robustness and reliability in predictions.

EMPLOYEEE CHURN PREDICTON

- Constructed a machine learning model to predict employee churn rate based on features such as job satisfaction, performance ratings, and work-life balance, achieving an accuracy of **87%**.
- Conducted comprehensive **EDA**, including handling missing values, encoding categorical variables, and scaling numerical features, using Python libraries such as Pandas and Scikit-learn.
- Applied Principal Component Analysis (**PCA**) to reduce the dimensionality of a high-dimensional dataset, retaining **95%** of the variance in the data while reducing the feature set by **60%**.

IMAGE TRANSLATION

- Generated an image translation model using **cycleGAN**, training two generators and two discriminators with a dataset of over **2,000** horse and zebra images.
- Achieved efficient training using mixed-precision , reducing memory usage by up to **50%** and accelerating overall training speed.
- Implemented robust model saving and checkpoint mechanisms, saving generated images every 100 iterations and ensuring seamless training resumption.
- Monitored performance metrics, with discriminator real/fake loss averages converging to **0.5** and generator cycle consistency loss reducing by **30%** over 100 epochs.