Kumar Ritik

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Education

Vellore Institute of Technology, Bhopal – B.Tech CSE (Sept 2022 – Ongoing) – **CGPA:** 8.2/10
Ishan International Public School, Patna - XII (May 2021) - 74.6%
Ishan International Public School, Patna - X (May 2019) - 92.0%

Experience

Data Science Intern – Sabudh Foundation (Jan 2025 – Present)
- Building an AI-driven video analysis tool for detecting and tracking advertisements in live and recorded NBA games.
- Implementing Computer Vision techniques to identify brand logos and overlay placements on courts and around the stadium.
- Working with tools like OpenCV, YOLO, and Python for model training and video processing.

Projects

Alzheimer's Disease Detection System (Aug 2023 – Nov 2023)
- Developed a deep learning model to detect Alzheimer's Disease from MRI brain scans.
- Implemented image preprocessing techniques including grayscale conversion, noise reduction, and histogram equalization.
- Trained a Convolutional Neural Network (CNN) using TensorFlow and achieved 92% accuracy.
- Conducted model evaluation using cross-validation to ensure robustness and generalization on unseen data.
- **Tech Stack:** Python, TensorFlow, NumPy, Pandas, Jupyter Notebook.

Stock Price Prediction (Nov 2024 – Jan 2025)
- Built an LSTM-based deep learning model to forecast stock prices using historical data from Yahoo Finance API
- Performed time series analysis, including data preprocessing, normalization and splitting data into train-test sets (80-20)
- Achieved 95.62% accuracy in predicting closing prices by optimizing hyperparameters using Grid Search.
- Implemented interactive visualizations with Matplotlib and Seaborn to display real-time stock trends.
- **Tech Stack:** Python, TensorFlow, Scikit-Learn, Yahoo Finance API, Matplotlib, Seaborn.

Credit Risk Analysis (Feb 2025 – Mar 2025)
- Built a Random Forest model to predict loan default risk on the LendingClub dataset.
- Performed data preprocessing, including handling missing values, encoding categorical variables and removing outliers.
- Handled a class imbalance using SMOTE achieving 99% accuracy and 0.89 F1 score for the minority class.
- Evaluated model using confusion matrix, precision (0.80), recall (0.99), F1-score (0.89) for imbalanced data.
- **Tech Stack:** Python, Scikit-Learn, NumPy, Pandas, Seaborn.

Skills & Technologies

- **Languages:** Python, C++
- **Tools & Technologies:** SQL, Power BI, Excel, Git, GitHub, Dataiku
- **Problem Solving:** Solved over 90 LeetCode problems

Certifications

- **Coursera:** Applied ML in Python (University of Michigan)
- **Kaggle:** Intermediate Machine Learning, Intro to SQL, Data Visualization, Feature Engineering
- **Google Cloud:** Generative AI, Large Language Models
- **Vityarthi:** AI & ML Fundamentals
- **Dataiku:** ML Practitioner, MLOps Practitioner
- **IBM:** Cyber Security Analyst

Additional Information

- **Achievements:** KSP Data-thon 2024 Semi-finalist
- **Extracurricular:** Core Member of Media Team, Health-O-Tech Club