Sahil Khan

Jaipur, Rajasthan, 302031
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Education

B.Tech in Computer Science *2021 - Present*
Rajasthan Technical University, Jaipur
Current CGPA: 8.5/10

Higher Secondary Education *2019 - 2021*
AVN (Ajeet Vidhya Niketa School), Jaipur
Percentage: 94%

Technical Skills

Programming Languages: Python, SQL, C++, HTML/CSS
Data Science & Machine Learning: Statistical Analysis, Machine Learning, Deep Learning, Computer Vision, Natural Language Processing (NLP), Generative AI, Transformers, Large Language Models (LLMs)
Libraries & Frameworks: NumPy, Pandas, Scikit-learn, TensorFlow, Keras, OpenCV, NLTK, Hugging Face
Tools & Platforms: Power BI, Tableau, Excel, Git, MySQL, VS Code, Jupyter Notebook, Google Colab
Soft Skills: Effective Communication, Analytical Thinking, Problem Solving, Team Collaboration, Adaptability

Experience

Data Analyst Intern Jaipur, Rajasthan, India
Learn and Build *Aug 2023 - Oct 2023*

- Utilized SQL and Python to analyze e-commerce sales data, identifying trends that improved product tracking and boosted market performance by **25%**.
- Developed Power BI dashboards that streamlined reporting processes, cutting report preparation time by **30%**.
- Presented actionable insights to stakeholders, enabling strategic decision-making and operational improvements.

Key Projects

Vehicle Damage Detection & Repair Cost Estimation

- Engineered a YOLO-based model for detecting vehicle damage, achieving **94%** precision with over **16,000** annotated images.
- Automated damage assessment, enhancing insurance claim processing speed and reducing error rates in cost estimation.
- Facilitated remote evaluations, streamlining investigation and claims resolution workflows.

Crime Section Recommender System

- Developed an **NLP-powered** tool to suggest relevant crime sections based on user-provided descriptions.
- Leveraged text preprocessing, embeddings, and cosine similarity for accurate matching, and built a user-friendly GUI in Tkinter for streamlined access to legal information, including offense details, punishments, and classifications.

Speech Emotion Recognition Using CNN-LSTM

- Built a robust Speech Emotion Recognition model leveraging CNN-LSTM architecture, designed to classify emotions from audio datasets (**TESS, RAVDESS, SAVEE, CREMA-D**).
- Extracted key audio features including MFCC, chroma, mel-spectrogram, ZCR, and spectral contrast using Librosa, followed by data preprocessing, scaling, and encoding.
- Optimized performance with advanced techniques such as BatchNormalization, Dropout, and L2 regularization, achieving **87%** training accuracy and **78%** validation accuracy on the combined dataset.

House Price Prediction Using Advanced Regression Techniques

- Performed data preprocessing, including feature engineering, handling missing values, and optimizing **81** input features.
- Built and evaluated Decision Tree, Random Forest, XGBoost, LightGBM, and CatBoost models, achieving the best RMSE of **23,271** and **R^2 of 0.915** with CatBoost.
- Conducted hyperparameter tuning with **3-fold cross-validation** using GridSearchCV, further optimizing model performance (Best RMSE: **23,372**).

Awards and Recognitions

- Achieved top ranks in **10th** and **12th**-grade exams with distinctions; recognized in local media for academic excellence.
- Participated in multiple AI and ML hackathons, developing innovative solutions under time constraints, gaining hands-on experience in rapid prototyping.