NILOY SANNYAL

Location: Dhaka, Bangladesh
LinkedIn | GitHub | Codeforces | Leetcode
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Technical Skills

Languages	:	Python, SQL, C++
Databases	:	MySQL, MS SQL Server
Data Analysis	:	Data Cleaning & Preprocessing, Data Manipulation, Feature Engineering, Exploratory Data Analysis (EDA), Data Visualization (Matplotlib, Seaborn, Pandas, NumPy)
Machine Learning	:	Linear Regression, Logistic Regression, Decision Tree, Random Forest, Support Vector Machine (SVM), KMeans Clustering, Naive Bayes
Dev Tools	:	Data Structures & Algorithms (DSA), Object-Oriented Programming (OOP), HTML, CSS, JavaScript, Flask, Postman, Render
Version Control	:	Git, GitHub

Competitive Programming & Problem Solving

Leetcode	:	150+ problems solved
Codeforces	:	200+ problems solved

Projects

Dhaka Home Rent Prediction

GitHub | Live Demo

Developed a full-stack machine learning web application that predicts residential rent prices in Dhaka based on real-time property attributes using a dataset of over 28,000 listings from Kaggle.

- Built a regression model using Random Forest Regressor (sklearn), achieving over 95% accuracy after GridSearchCV hyperparameter tuning and K-Fold cross-validation.
- Applied key data science concepts: data cleaning, outlier removal (3-sigma rule), feature engineering (e.g., rent per sqft), and dimensionality reduction by grouping rare locations to improve generalization.
- Designed and implemented a Python Flask server to serve the trained model and handle prediction requests via HTTP.
- Developed a modern, responsive frontend UI using HTML, CSS, and JavaScript where users can input home features (area, bedrooms, bathrooms, location) to get real-time rent predictions.
- Deployed the complete application on Render with both frontend and backend seamlessly integrated.
- Technologies Used: Python, Pandas, NumPy, Scikit-learn, Python Flask server, HTML, CSS, JavaScript, Render.

Footballer Face Recognition

GitHub | Live Demo

Built a multi-class face recognition system to identify professional footballers using OpenCV and SVM, integrated into a full-stack web app.

- Processed 1,300+ images (130 per player) using an OpenCV pipeline: detected faces (Haar Cascades), cropped, resized to 32×32, and stacked RGB + grayscale features.
- Engineered and optimized Logistic Regression (87% accuracy, 0.88 macro F1) and SVM (86% accuracy, 0.87 macro F1) classification models using GridSearchCV for hyperparameter tuning
- Designed an interactive and responsive web UI (HTML, CSS, JavaScript) with drag-and-drop image upload for real-time predictions.
- Deployed the ML model using a Flask backend on Render, enabling live inference and real-time results display.
- Technologies used: Python, Scikit-learn, OpenCV, Python Flask server, HTML, CSS, JavaScript, NumPy, Pandas.

Education

University of Rajshahi — Rajshahi, Bangladesh
Bachelor of Science in Information and Communication Engineering — *Jan 2019 – Oct 2024*
Graduation: October, 2024