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Project 4

Project 4 Project Proposal: NBA Player Statistics Analysis and Prediction System

Overview: Develop a basketball player statistics analysis and prediction system using machine learning techniques with NBA player datasets. The system aims to provide insights into player performance and predict player stats based on historical player data. By leveraging the power of machine learning algorithms and the comprehensive NBA player statistics dataset.

Data: Utilize NBA datasets from APIS, including the following sources:

1. https://www.kaggle.com/datasets/vivovinco/20222023-nba-player-stats-regular?select=2022-2023+NBA+Player+Stats+-+Regular.csv
2. https://rapidapi.com/api-sports/api/api-nba

Objectives:

1. Predict basketball player stats for the upcoming season based on historical data
2. Leverage player stats from the previous year to forecast player performance
3. Identify suitable machine learning algorithms for scalability, accuracy, and interpretability in predicting player performance.
4. Evaluate the performance of the prediction system and ensure its effectiveness in real-world scenarios, such as team selection and player scouting.

Methodology:

1. Data Collection: We will gather a large dataset from APIs as indicated above.
2. Data Preprocessing: The collected data will undergo preprocessing steps such as data cleaning, normalization, encoding to ensure compatibility with machine models and features engineering from the NBA datasets.
3. Exploratory Data Analysis: Gain insights, patterns, and feature distributions.
4. Model Training and Evaluation: Experiment with ML algorithms, and fine-tune for accurate predictions.
5. User Interface Development: Create an intuitive interface for users to input player data they wish to see
6. Testing and Validation: Ensure the accuracy, robustness, and scalability of the prediction system.