

DEPARTMENT OF COMPUTER ENGINEERING AND TECHNOLOGY

BTech Capstone Project Academic Year 2024-25

❖ **Title of the Project: Optimal Real Time Substitution in Football**

❖ **Name of the Students:**

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Group ID: P44

Category of the Project: In-House

Name of the Internal Guide: Prof. Rashmi Rane

❖ **Summary of Work:**

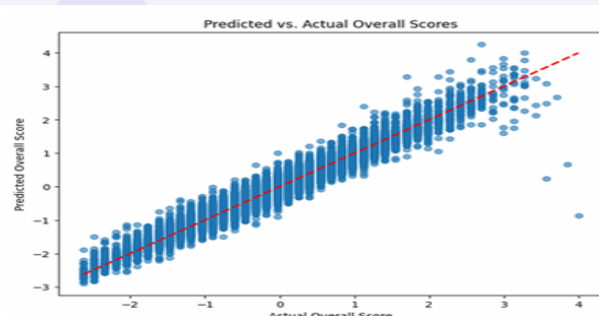
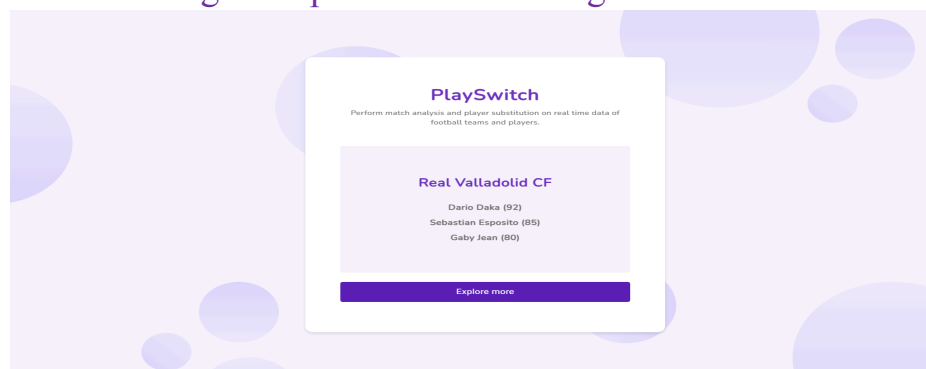
Abstract: This project focuses on analyzing football player performance data to provide actionable insights for team management and match strategies. By leveraging statistical methods and integrating web APIs for real-time data extraction, the project ensures accurate and dynamic evaluation of players across various teams. The analysis considers crucial performance metrics such as skill, attacking, movement, defending, and mentality to assess individual contributions to the team.

□ **Objectives:**

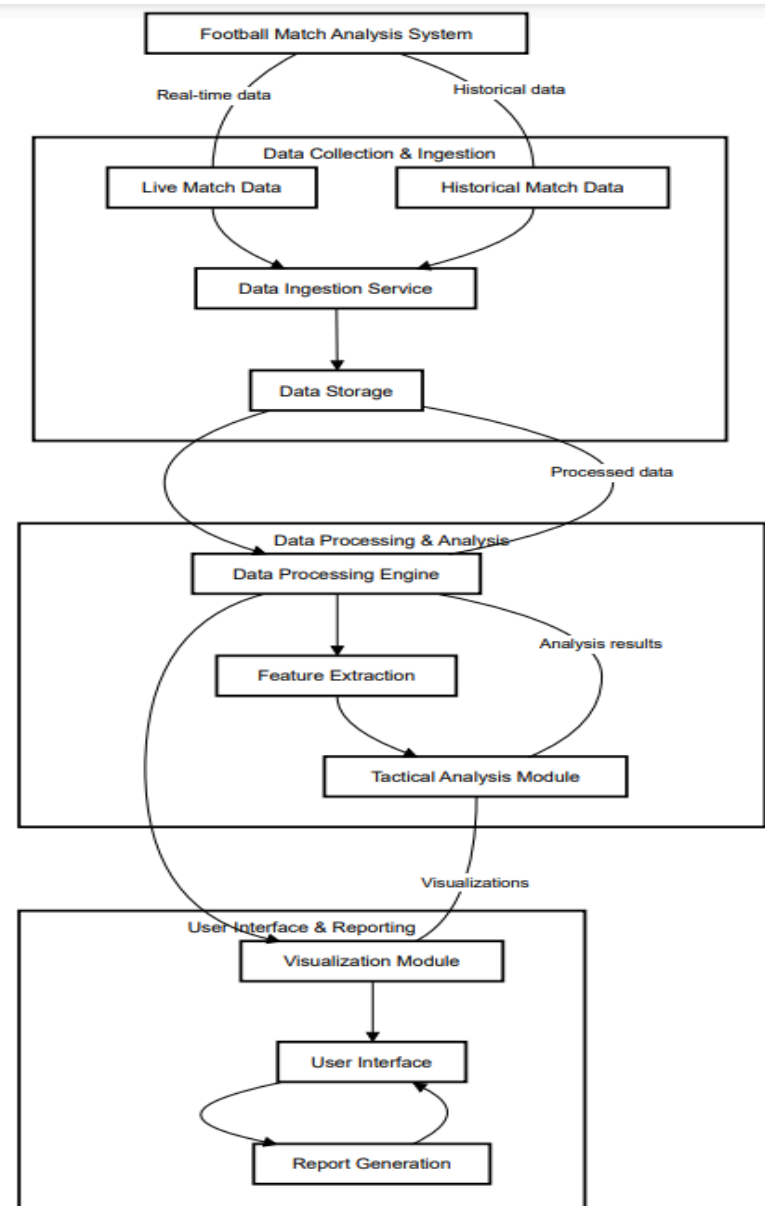
- *Web API Integration:* Extract real-time and historical player statistics using APIs to ensure up-to-date analysis.
- *Performance Evaluation:* Analyze player statistics across key metrics to gauge their overall contribution to the team.
- *Substitution Recommendations:* Identify underperforming players and suggest suitable replacements from the same team to enhance gameplay.
- *Comparative Analysis:* Compare player stats within teams to highlight strengths and areas of improvement.

□ **Result and Analysis:**

The project achieved notable success in evaluating football player performance through extracted API data and player statistics. With a precision of 92% and an accuracy of 88%, the model effectively identified high-performing players and suggested substitutions for underperformers based on key metrics like average skill, movement, and mentality. These results highlight the system's potential to assist team management in making informed, data-driven decisions, ultimately enhancing team performance during matches.



System Architecture:



The system architecture integrates API data extraction, preprocessing, player performance analysis, and substitution recommendations using statistical and machine learning models.

Conclusion: The project successfully identifies optimal player substitutions by analyzing performance metrics and team dynamics. This approach enhances decision-making for match strategies and demonstrates the value of data-driven insights in football management.