The CS Enthusiasts Final Project

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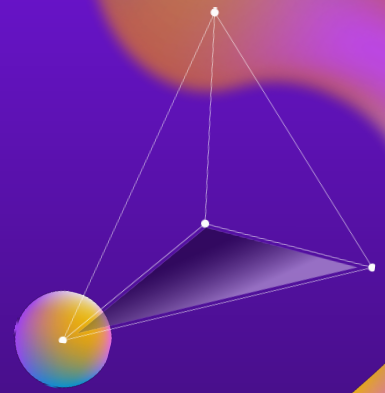
Problem

Sport teams want to improve their overall performance and decision-making processes. They want easier ways to see how their team is doing, and how they can expand their game.



Solution:
Sports-Data Analytics Bot

- A capable bot to handle data analytics in growing the fast-paced field of sports analytics.
- Sports organizations encounter difficulties in analyzing and obtaining practical insights due to the abundance of data sources, and limited processing technology.
- Machine learning and natural language capabilities could automate this process, & simplify data management.


$1,900,000,000
Global Sports Analytics Market

Impact on Sport

10%

League: NBA/NFL

Increase in revenue through competition.

40%

Franchise:

Increasing likelihood of fan spending, better performance in game.

50%

Players/Coaches:

Using analytics for players development, improve capabilities.

Vision

- To create a regenerative model, that can learn from past predictions.
- To create a cloud access feature to process data and distribute it through cloud.
- Make predictions using our bot and testing.

1

Project and strategy

Concepts discussed in class

	What is it?	Was it useful
Stand Up	Meetings to discuss our progress and blockers	Yes. It allowed us to coordinate better.
Personas	Stories about users and how they would use our app.	Yes. It allows us to think of features to implement.
Software Architecture	The design decisions related to system structure and behavior.	Yes. We chose pipelining because it best fits our project goals.

Future Work

1

Community Activities

Make activities such as polls that users can interact with.

2

Pseudo-Currency Betting

Make a in-app currency that users can use to make bets

3

Real Time Odds

There could be statistics displayed for current games.

4

Community Stats

Show betting and community response statistics in the form of leaderboards and achievements

Related Work

Data Scraping

Sports data scraping allows for users to gather large amounts of information from multiple sites automatically. This allows for lots of data for sports analysis.

Data Analytics Libraries

Libraries like Pandas, and NumPy for python allow for data analysis that is easy to understand. Using these libraries in addition to sports data can help sports analysis.

R Coding Language

R is a open-source programming language for statistics and data visualization. R can be used with sports data for data cleaning, importing, and different statistical analysis

Related Work

Research note

Michael J. Lopez*

Analyzing the National Football League is challenging, but player tracking data is here to help

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MARCH 11 - 12, 2016 BOSTON CONVENTION AND EXHIBITION CENTER

Classifying NBA Offensive Plays Using Neural Networks

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Abstract

Modeling and prediction of tennis matches at Grand Slam tournaments Cite

Authors: Buhamra, N. | Groll, A. | Brunner, S.

Article Type: Research Article

Abstract: In this manuscript, different approaches for modeling and prediction of tennis matches in Grand Slam tournaments are proposed. The data used here contain information on 5,013 matches in men's Grand Slam tournaments from the years 2011–2022. All regarded approaches are based on regression models, modeling the probability of the first-named player winning. Several potential covariates are considered including the players' age, the ATP ranking and points, odds, elo rating as well as two additional age variables, which take into account that the optimal age of a tennis player is between 28 and 32 years. We compare the different regression model ... Show more

Keywords: Grand Slam tournaments, Tennis matches, prediction, model selection, cross validation, penalization

DOI: 10.3233/JSA-240670

Citation: Journal of Sports Analytics, vol. 10, no. 1, pp. 17-33, 2024

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Performance analysis in top handball matches in the seasons before, during, and after the COVID-19 pandemic Cite

Authors: Krawczyk, Paweł | Szczerba, Mateusz | Labiński, Jan | Smoliński, Maksymilian

Article Type: Research Article

Abstract: The aim of the study was to determine whether there are differences in performance analysis in handball between Pre-COVID-19, during COVID-19, and Post-COVID-19 seasons. The study material was obtained from the official match statistics of PGNiG Super league Ltd. Matches were played in the 2019/2020 season before COVID-19, 2020/2021 during COVID-19, and 2021/2022 Post-COVID-19. The Mann-Whitney U test was used for comparisons between two groups, for three groups using the Kruskal-Wallis test. In Pre-COVID-19 season, players made an average of 1.3 more 9meter throws the Post-COVID-19. Post-COVID-19 season is characterized by a higher 6meter goals and 6meter throw count with ... Show more

Keywords: Keywords: Man, statistic, tactic, round, actions

DOI: 10.3233/JSA-240769

Citation: Journal of Sports Analytics, vol. 10, no. 1, pp. 35-45, 2024

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