PROJECT STATUS REPORT

Project Name	Chaos Theory - Monte Carlo Simulation for Football Predictions and Strategy Optimisations	**Reporting Period**
Sport	Football	06/06/2023 - 08/09/2023
Team members	Sukruthi Sanampudi Avani Dhagam Divyansh Vinayak Siddharth Prakash	

HIGHLIGHTS

- Acquired the “European Soccer Database“ from Kaggle as the primary database for analysis.
- Analyzed the database and created CSV files categorizing football players based on their positions.
- Utilized a heatmap and correlation matrix to examine the relationship between player attributes and overall rating.
- Employed statistical analysis techniques to assess the impact of different attributes on player performance.

CHALLENGES

- We encountered challenges in reviewing over 10 research papers to establish correlations with our research. Finding direct connections was difficult, requiring careful analysis and critical thinking.
- Implementing the regression model involved working with tough coding languages, which presented a steep learning curve. We invested significant time and effort in learning and troubleshooting to successfully develop the model.

- We faced obstacles in gathering the necessary data, which may have included limitations in available resources or unexpected complexities. Overcoming these challenges required adaptability and problem-solving skills.

STATUS UPDATES

Task or Deliverable	Task Owner	Status	Notes
Literature Review	Avani Dhagam, Siddharth Prakash	DONE	Reviewed 10+ papers in relation to our topic
Data gathering and review	Divyansh Vinayak, Sukruthi Sanampudi	DONE	Gathered data and reviewed the features for filtering
Model Evaluation and Data Segregation	Avani Dhagam, Divyansh Vinayak, Siddharth Prakash, Sukruthi Sanampudi	ONGOING	Model evaluation using independent data
Model Implementation and coding	Avani Dhagam, Divyansh Vinayak, Siddharth Prakash, Sukruthi Sanampudi	STUCK	Implementation of an ML model for an optimal predictive lineup
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NEXT STEPS

- Analysis and Verification of various ML algorithms for model selection
- Segregation of the Testing / Training data from the existing dataset
- Implementation and Coding of the selected optimal Machine Learning model
- Web App development for model deployment

Action Items

Task or Deliverable	Task Owner
Selection of the relevant parameters for LB, LM, and LW Positions using NumPy functionality to find a correlation	Avani Dhagam
Selection of the relevant parameters for RB, RM, and RW Positions using NumPy functionality to find a correlation	Divyansh Vinayak
Selection of the relevant parameters for CDM, CAM, and CB Positions using NumPy functionality to find a correlation	Sukruthi Sanampudi
Selection of the relevant parameters for CF, ST, and CM Positions using NumPy functionality to find a correlation	Siddharth Prakash
Literature Review	Avani Dhagam, Siddharth Prakash
Data Review	Divyansh Vinayak, Sukruthi Sanampudi
Model Evaluation and Model Implementation (Ongoing)	Avani Dhagam, Siddharth Prakash
Web App Deployment using Flask and Django (Upcoming)	Divyansh Vinayak, Sukruthi Sanampudi

Pending Issues

- Deployment of the ML model has been an issue for us

Mentor in charge

Faculty in Charge: Dr. Charu Kathuria

Comments given by the faculty : She requested us to do a more extensive Literature review which could help us with our project