

Visualizing the Value of Football Players

Unveiling the hidden patterns of football player stats that drive their market value and career longevity

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Introduction

Unveiling Football Player Patterns

- Exploring statistical patterns hidden within football player data
- Analyzing market trends and player performance metrics
- Understanding the factors influencing player value and career longevity
- Highlighting correlations between stats, market worth, and player positions

Exploring Market Value

- Investigating how data analytics is transforming football dynamics
- Identifying key insights into player market value determinants
- Examining the impact of age and position on player worth and career span
- Utilizing FIFA23 player database and authoritative football stats sources

Analysing Career Longevity

- Delving into the relationship between player statistics and career longevity
- Assessing the role of age, position, and performance in player sustainability
- Exploring patterns indicating strategic decisions in player management
- Using dynamic data sources to forecast and identify potential biases

Visualization Overview

Who Benefits from Visualization

- Football analysts utilize visualization to identify player patterns and make strategic decisions.
- Fantasy league enthusiasts gain insights into player statistics for informed team selection.
- Sports journalists rely on visualization to communicate player performance effectively.
- Fans engage with visualized data to understand player market value and career trajectories.

What the Tool Offers

- Altair
- HTML
- CSS
- Observable

Why Visualization Matters

- Visualization helps understand the impact of player attributes on success in football.
- Enables a clear view of how market value and player performance are intertwined.
- Facilitates informed decisions based on visualized data insights.
- Enhances the ability to identify patterns and trends crucial for player evaluation.

Project Description & Inspiration

Making Sense of Player Data

- Analysing vast player data in FIFA 23 to extract valuable insights.
- Identifying key statistics influencing player market value and career trajectories.
- Exploring the correlation between age, position, and a player's value.
- Highlighting the significance of data analysis in understanding player potentials on the courts.

Evolution of Football Data Analysis

- Tracing the evolution of analysing football data for strategic decisions.
- Adapting to the changing landscape of football data analytics.
- Embracing technology trends to gain deeper insights into player performances.
- Incorporating advanced statistical methods to enhance decision-making in football.

Research Questions & Data Sources

Research Questions

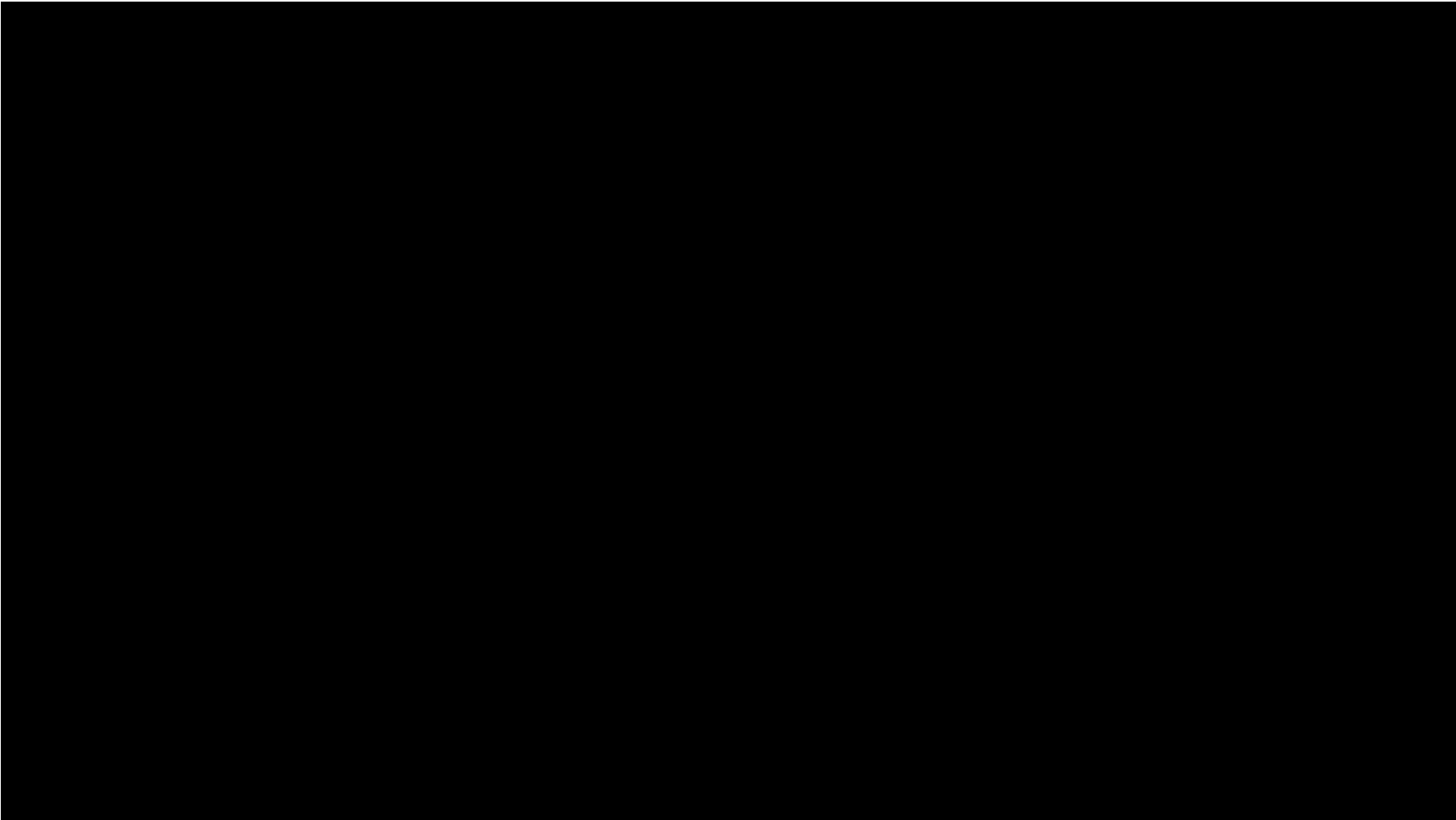
- What are the relationship between the players' value/score overall and player attributes like height, weight, preferred foot, weak foot level, etc.?
- Comparative analysis with top-performing players to identify key performance indicators at different positions
- Effect of age and position on market value
 - Position-specific factors influencing a player's market value, like goalkeepers' longevity versus forwards' market peaks. Age-related market worth shifts, with young talents commanding higher fees and experienced players showcasing value in different ways.

Data source

- <https://www.kaggle.com/datasets/anshulchauhan21/fifa-2023-dataset>
- FIFA23

Project Demo

<https://youtu.be/QHp0M7a3p50>



a link to access
our deployed tool
on the web:

https://colab.research.google.com/drive/1KU13Pm0T8_2uH7yPGdwscs6lHx0r4nUD?usp=sharing

source code in the
GitHub repository:

<https://github.com/larrysangfake/fifa23>

Limitations

1. **Data Timeliness:** Since the data is not real-time, it may not reflect the most current stats or consider the latest matches and player conditions. Players' forms and values can fluctuate quickly based on recent performances.
2. **Standardization Issues:** Without standardized data collection across different football associations and leagues, there can be inconsistencies in the data. This affects the accuracy and reliability of comparisons and trend analysis.
3. **Depth of Data:** While you have some data on players, there might be a lack of detailed statistics that can provide a deeper insight into the players' performance, such as off-the-ball movements, defensive actions, or mental attributes.
4. **Bias in Data:** There could be a bias towards more popular leagues or players, which means lesser-known players' contributions or rising stars in smaller leagues might not be adequately represented.
5. **Visualization Interpretation:** The way data is visualized might lead to misinterpretations, especially if viewers are not familiar with how to read or contextualize the visualizations properly.

Key Insights & Conclusions

1. **Positional Value Nuances:** The visualization underscores that different positions on the football field have varying impacts on a player's market value. Forwards and midfielders often command higher values due to their roles in goal creation and scoring, which are highly visible and valued aspects of the game.
2. **Age and Talent Dynamics:** Young talents like Kylian Mbappé and Erling Haaland are highly valued for their potential to impact the game over many years. However, veterans like Lionel Messi and Cristiano Ronaldo prove that exceptional talent can sustain high market values, even with advancing age.
3. **Experience vs. Physicality:** Defenders and goalkeepers tend to peak at older ages due to the value placed on experience and decision-making, which are crucial for these roles. This contrasts with midfielders and forwards, where physicality and stamina are paramount, favoring younger players.
4. **Skill Moves and Weak Foot Proficiency:** Players with higher skill moves and strong weak foot abilities tend to be more versatile and unpredictable on the field, traits that are highly sought after in attacking positions. While these skills are less emphasized for defenders and goalkeepers, they are still considered assets, reflecting the comprehensive skill set of professional players.
5. **Market Value Exaggeration:** While market values are critical indicators of a player's worth, they can sometimes overstate the differences in actual performance and skills. This can lead to an imbalanced perception where high-value players overshadow their equally skilled, yet less-valued, counterparts.

Individual Contribution

Team members	Assignment
Yanxin LI	<ul style="list-style-type: none">• Graph coding• Experiments• Presentation writing
Zihao YIN	<ul style="list-style-type: none">• Graph design• HTML design• Presentation writing
Linhui SANG	<ul style="list-style-type: none">• Storytelling thoughts & experiments• Graph design• HTML design



Thank you!