It’s world cup month! The long awaited 2022 Fifa World Cup is here. To celebrate, we’re taking a look at how data science is changing soccer (or football) analytics. Techniques such as probability theory, time series analysis, and spatial analysis give teams an edge over the competition, and are gradually changing the nature of the beautiful game.

6 Data Science Use-Cases in Soccer

1. **Team & Match Performance**
   - With advanced analytics, teams leverage model performance data, video footage, expected goals and assists, and other data to enhance and optimize their performance deeply. This is usually a more reliable indicator of how well a team performed than the score itself.

2. **Player Performance**
   - By using metrics calculated from event data, teams can identify over- or underperforming players, sharpen areas for team improvement, and select the best player for a given game or playoff.

3. **Set-piece Optimization**
   - Improving the performance of corners and free kicks provides the quickest way to increase the number of goals scored. Data analytics can help determine the best approach for poses, for example, by analyzing corner vs. non-corner positions.

4. **Player Recruitment**
   - Choosing the next player signing is one of the biggest decisions for a team. With data, teams can identify players that fit their market and their playing style. This will help smaller teams take on well-funded bigger teams.

5. **Training Optimization**
   - Data can be used to determine where to concentrate training times and monitor player fitness. This helps keep players injury-free, avoid overtraining, and optimize training sessions to improve a player’s overall fitness.

6. **Gameplanning & Strategy**
   - Using the same techniques to analyze match and player performance, teams can also analyze their opponents’ performances and identify weaknesses. Data can be used to define tailored strategies and game plans for teams to use.

How Data Science is Being Used in the Fifa 2022 World Cup

- **Tracking Match Events**
  - Combining image recognition with video data and GPS data enables teams to track and follow access to all possible match events and player performance and position.

- **Winner Prediction**
  - Bettors and sport analysts use performance data and statistics to generate winning odds. Can you see data to predict the winner?

- **Automatic Replay**
  - Computer vision and related algorithms enable on-demand replays to be automatically generated.

- **Semi-automated Offside Technology**
  - Using AI and computer vision technology, the match officials can make faster and more accurate offside decisions.

- **Player-Facing Analytics**
  - Players have access to on-demand access to their own performance data, match analysis, and video replays via a dedicated app.

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