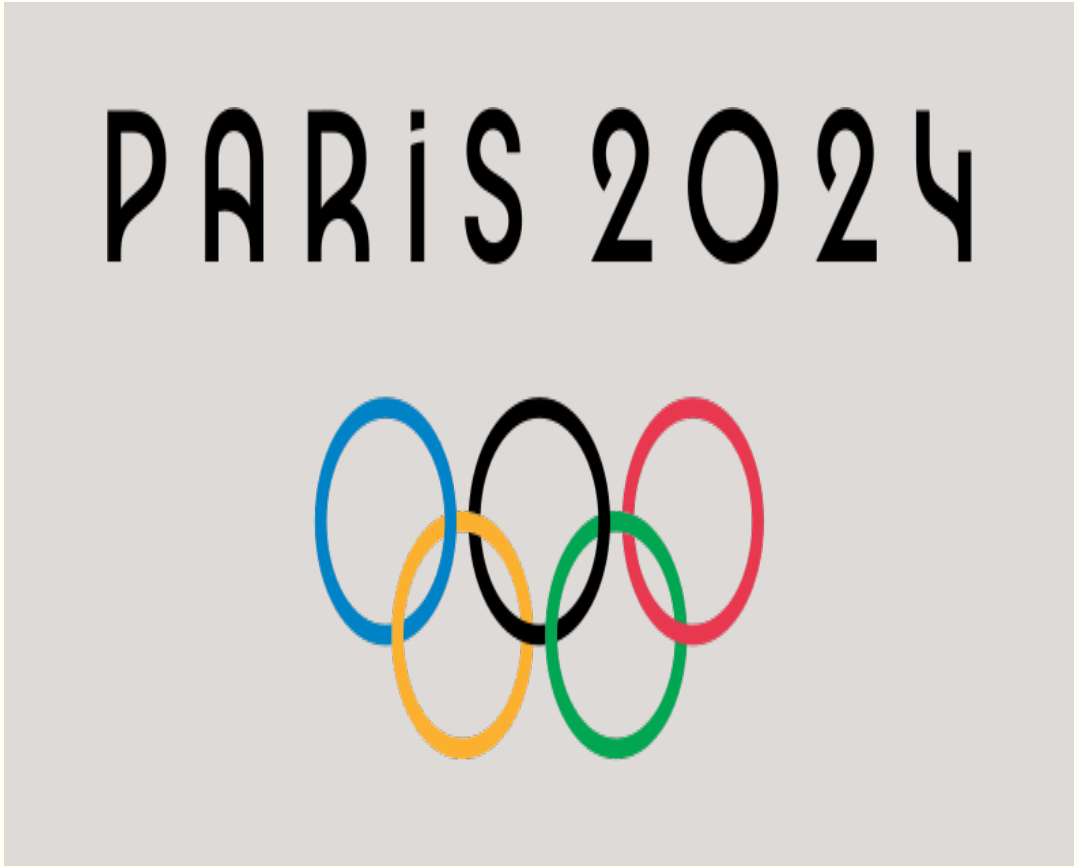
PICKING THE USA GYMNASTICS OLYMPIC TEAM

Ryan Talbot



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Problem Statement

The challenge is to develop an analytics model that assists in selecting the optimal composition of the Team USA Olympic Men's and Women's Artistic Gymnastics teams for Paris 2024. The objective is to identify the group of 5 athletes that would maximize success by considering various factors such as medal count, medal type, team dynamics, and individual capabilities. This project is my submission for the **UCSAS 2024 d**ata Challenge.

Related Work

- BEYOND BILES: PREDICTING THE REST OF THE U.S. GYMNASTICS ROSTER

June 24, 2021

by Julia Blank

https://harvardsportsanalysis.org/2021/06/beyond-biles-predicting-the-rest-of-the-u-s-gymnastics-roster/

Proposed Work

I propose developing an advanced analytics model that integrates historical performance data, athlete specialization, recent competition results, and the evolving competition structure to optimize the composition of the Team USA Olympic Artistic Gymnastics teams. The model will consider various scenarios, such as maximizing total medal count, emphasizing gold medals, or considering a weighted medal count based on medal type.

Evaluation

Timeline

- Project Initiation and Problem Understanding (**1 week**): Understand the project requirements, goals, and constraints. Define the scope of the analytics model and establish key objectives.

- Data Collection and Preparation (**4 weeks**): Gather historical performance data for gymnasts, team events, and individual apparatus events. Clean, preprocess, and organize the data for analysis.

- Model Development and Testing (**6 weeks**): Develop the analytics model that predicts performance outcomes based on historical data and considers various optimization scenarios. Test the model's accuracy and recommendations against historical events.

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- Scenario Testing and Optimization (**5 weeks**): Implement different scenarios, including maximizing total medal count, emphasizing gold medals, and exploring weighted medal counts. Assess how different scenarios impact team compositions.

- Validation and Real-world Applicability (**3 weeks**): Validate the model's recommendations against actual gymnastics events leading up to Paris 2024, such as the 2023 World Championships.

- Visualization and Reporting (**4 weeks**): Create clear and informative visualizations to present the model's insights and recommendations. Compile a comprehensive report outlining the methodology, findings, and implications of the analytics model.

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- Peer Review and Revisions (2 weeks): Seek feedback from peers and incorporate any necessary revisions and improvements.

- Presentation and Submission (2 weeks): Prepare a concise and engaging presentation summarizing the project's objectives, methodology, results, and recommendations. Complete the submission for the UCSAS 2024 USOPC Data Challenge.

Conclusion

In summary: