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NBA GAME WIN PREDICTOR

Exploring the game win probabilities of each team



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OBJECTIVE

- Predict the chances of the Knicks and the Pacers winning each game in the series before each game using recent game performance metrics





DATA

- Pulled data from nba_api library
 - 96 rows, 28 columns
- Specified teams to focus on: New York Knicks and the Indiana Pacers
- Focused on playoff game logs
- Included float, integer, string, object and datetime data types
- Data includes team metrics, game results, and dates





METHODOLOGY

- Selected performance metrics: FG%, FG3%, REB, AST, STL, TOV, PLUS_MINUS
- calculated per-team averages over recent playoff games
- Used Random Forest Classifier for binary prediction of 0 (loss) vs 1 (win)
- visualized trends and feature impact using matplotlib and seaborn libraries

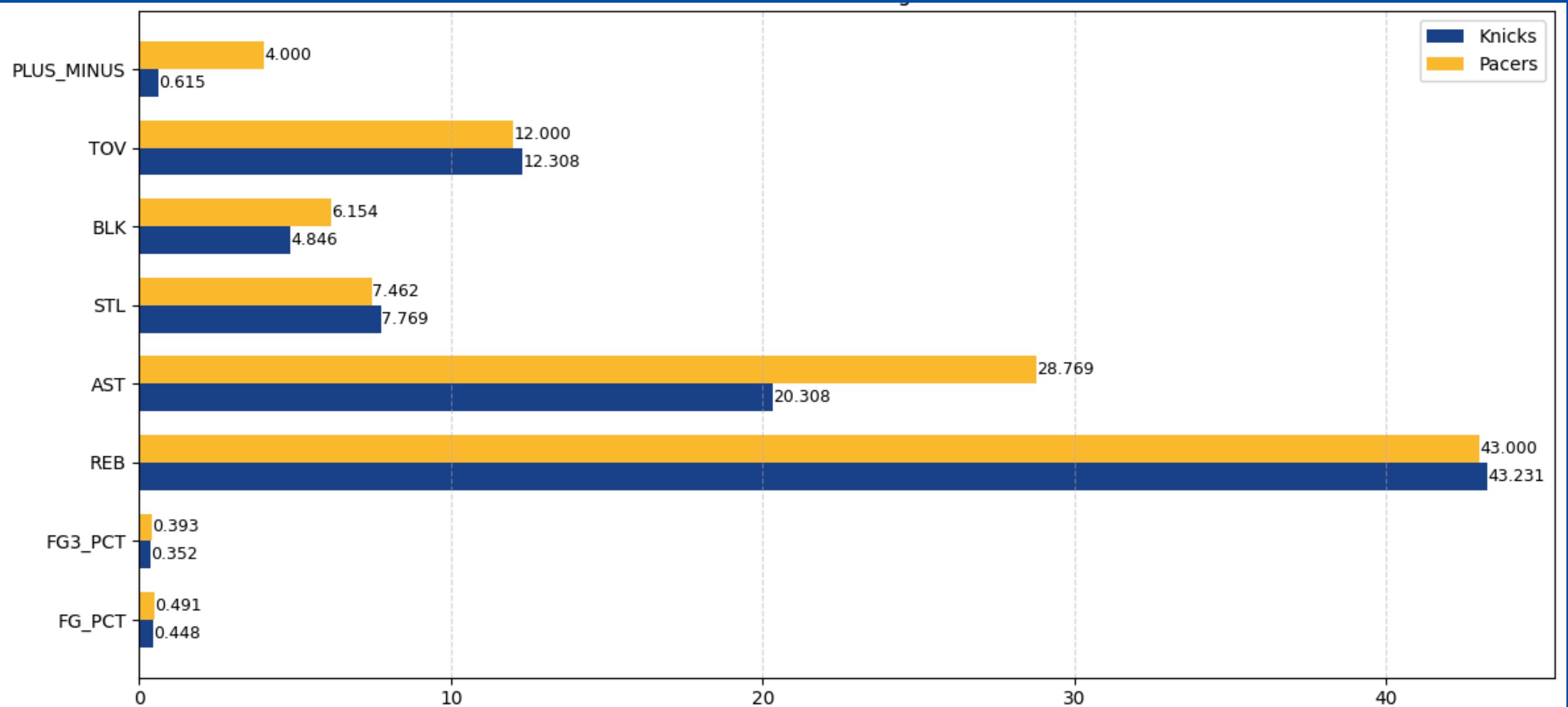




RESULTS

- Game 1 Predictions:
 - New York Knicks Chance of Winning: 49.733%
 - Indiana Pacers Chance of Winning: 50.267%
- Game 2 Predictions:
 - New York Knicks Chance of Winning: 48.649%
 - Indiana Pacers Chance of Winning: 51.351%
- Key Features: FG_PCT, AST, PLUS_MINUS, REB had the most influence on game win probabilities





- Pacers are stronger offensively, shown by higher FG%, 3Pt%, and assists
- Larger plus/minus indicates that the Pacers perform better
- Knicks are better at steals and rebounds





IMPLICATIONS

- Key performance metrics offer strong predictive power when used correctly
- Game modeling has a future in:
 - real-time reporting dashboards
 - sports analytics
- Shows ability to build ML pipelines, clean large datasets nad explain outputs visually





NEXT STEPS

- Expand to Western Conference Finals and NBA finals
- Test different models (XGBoost, Ensemble Methods) for better interpretability
- Explore player stats for better predictions
- Build interactive Tableau dashboard



The End

Go Knicks!