

# Minefield / Sports Betting AI

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## Overview

- Goals of Project
- Original Data
- Final Data
- Models
- Results/Conclusion



# Overview

- **Project Goal**
  - Build a model to aid betting on NBA teams
- **Scraping**
  - Scraped team data from Basketball-reference.com using NBA data from 1980-2022 to predict 2022 season data
- **Technologies**
  - Python (Pandas, BeautifulSoup, Matplotlib), Jupyter, SciKit-Learn, HTML5, CSS3, VS Code
- **Modeling**
  - RandomForestRegressor using SciKit-Learn, focused on Win-Loss %
  - Linear Regression per season per team

# Original Data

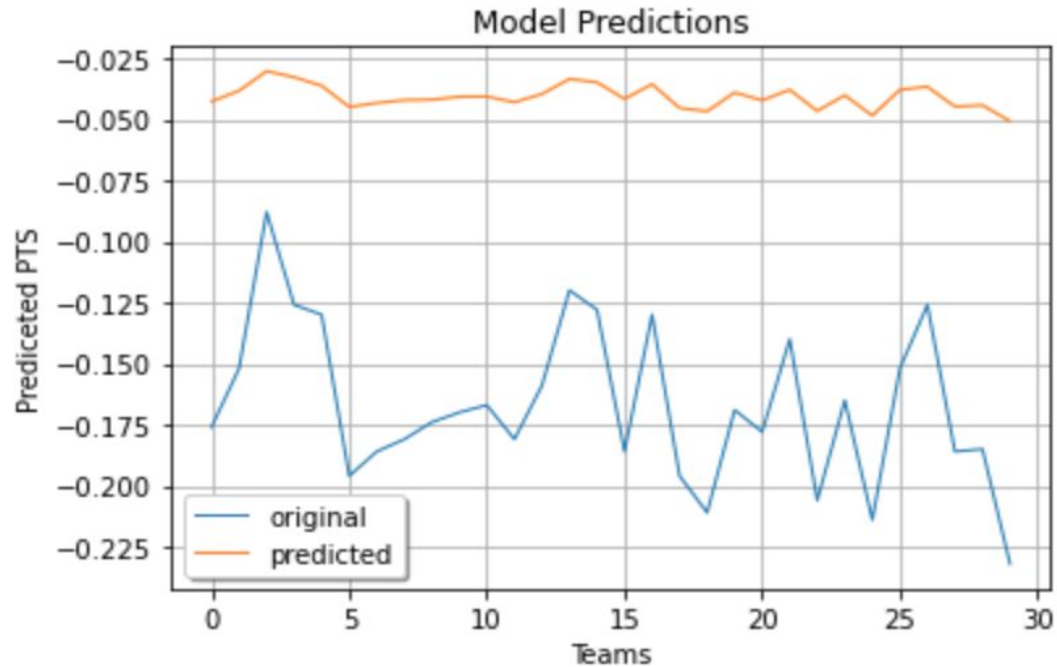
## NBA Team Win Trends - All Games, 2021-2022

Win/Loss ATS Over/Under

+ Definitions

Range:	2021-2022	Show:	All	Situation:	All Games
Team	Win-Loss Record	Win %	MOV	ATS +/-	
Phoenix	50-12-0	80.7%	8.1	+1.6	
Golden State	43-20-0	68.3%	6.6	+1.2	
Memphis	43-21-0	67.2%	4.6	+2.8	
Miami	42-22-0	65.6%	4.7	+2.2	
Utah	39-22-0	63.9%	6.8	-0.3	
Philadelphia	38-23-0	62.3%	2.5	-0.2	
Chicago	39-24-0	61.9%	1.8	+0.1	
Milwaukee	38-25-0	60.3%	3.5	-2.0	
Dallas	38-25-0	60.3%	3.4	+1.8	
Boston	38-27-0	58.5%	5.5	+2.0	
Denver	36-26-0	58.1%	2.6	+0.8	
Cleveland	36-26-0	58.1%	3.5	+3.8	

## Model 1 - Predicted vs. Actual PTS

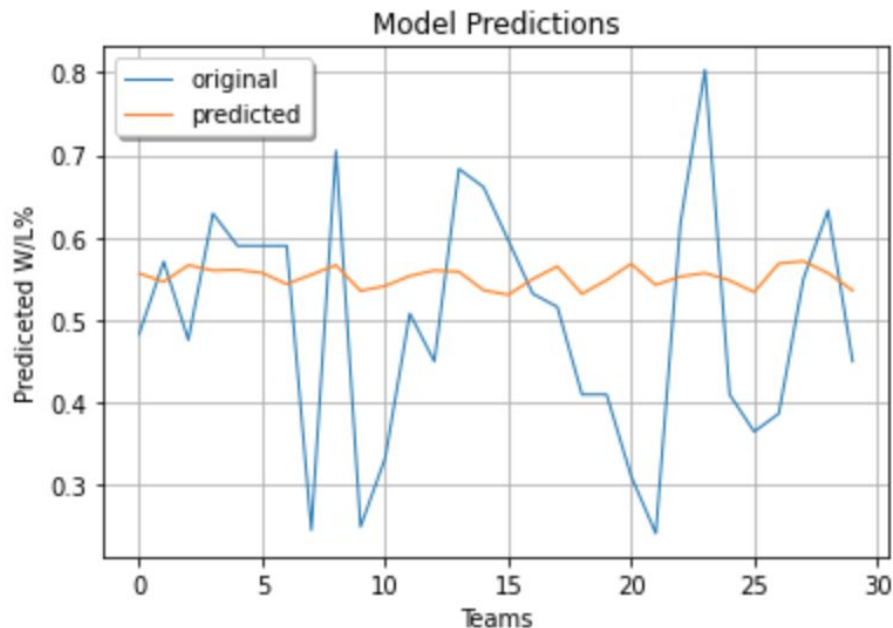




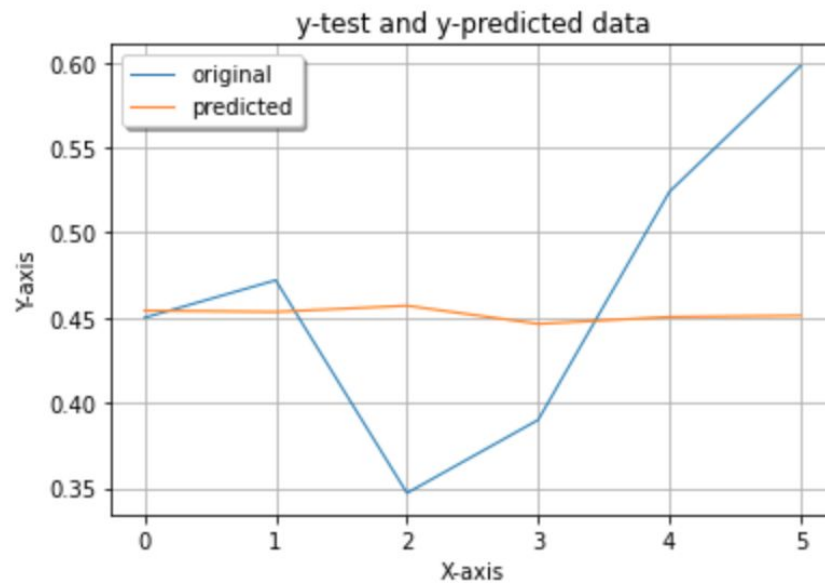
## Model 2

- **Random Forest Regression** (Combined & Team by Team)
  - Runs model on all past seasons as training data and the current season as test data
    - Low r-squared
  - Team by Team
    - Each team with separate model
      - R-squared results mixed
    - 12 teams have negative R-squared values

## Combined Model - predict Win/Loss% for 2022 season



## Team by Team Model







# HTML Pages



# Results



## Conclusions

- Strengthening the model
- Formatting of the data
- Weighting recent data more heavily
- Betting difference than straight odds