# Beating the Market

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# Sportsbooks



- Legal in over half of the states in US

- **NY** had over **$4 billion** in mobile sports betting **since** legalizing in **January** 2022

- Betting lines are set internally or by 3rd party researchers

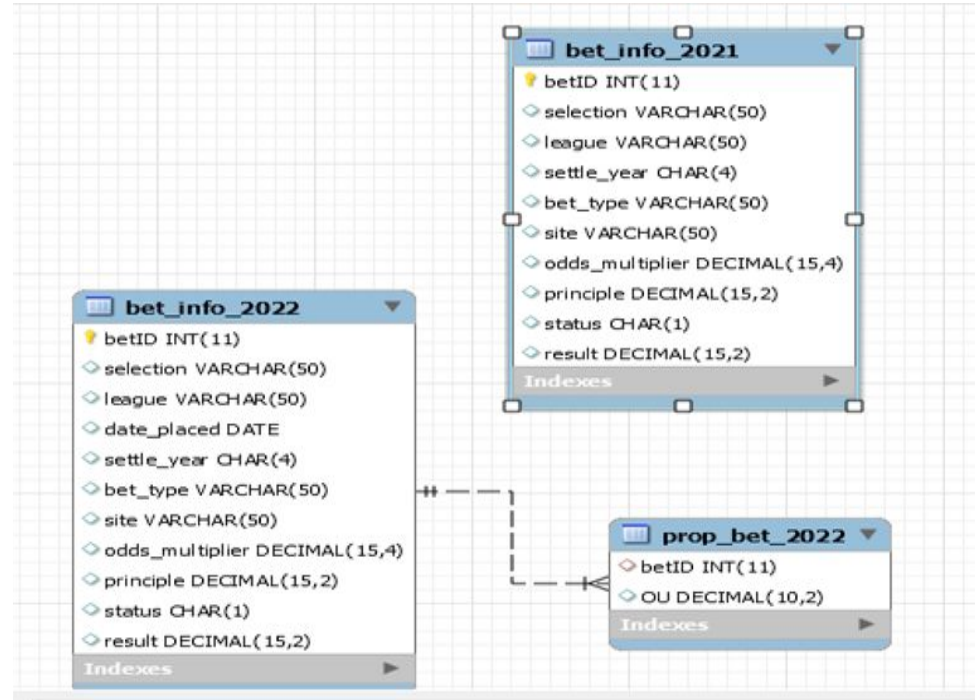# Are Sportsbooks Market Efficient?

**Not exactly...**

## Goals

- ❏ Develop Database and Web Application to support current +EV strategies
- ❏ Explore and develop regression model to predict a prop-bet outcome

# Database

- Built on local MySQL server

- General bet info broken by *year*

- Prop bet table connected by betID

# WebApp - Entry Slip & Portfolio Analysis



**Sports Trading Tracker**

Bet Selection

0/30

Date

2022/04/15

Betting Site

DraftKings

Sports League

NBA

Bet Type

6th Man
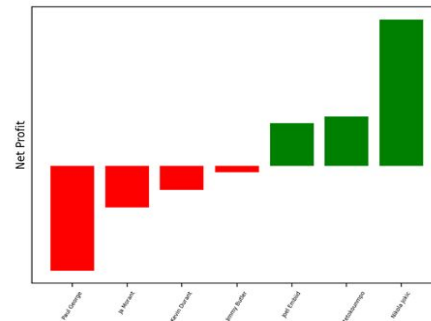
Odds Multiplier

Principle

Status

A

Payout

Submit Bet!



**Sports Trading Tracker**

Sports League
- NBA
- NFL
- USTA Men's
- USTA Women's

Bet Type

MVP

# Predicting a Prop Bet - Data

- **Target**: Predict Points + Rebounds + Assists for an NBA player in a given game

- **Data**: player metrics by game over several years (100K+ rows by 65 columns)

- **Pre-processing**: removed approximately half of rows, as less important players would not be available to bet on

- **Feature Engineering**: lagging metrics

# Results

| | RMSE | MAE |
|---|---|---|
| **Decision Tree** | 9.32 | 7.32 |
| **Random Forest** | 6.52 | 5.14 |
| **XGBoost** | 5.63 | 4.53 |

**Conclusion**: On track and worth investing more time and money

# Summary + Next Steps

- ❏ Built Database
- ❏ Web application to support portfolio analysis of current and past trades
- ❏ Initial Regression Model

## Next

1. Experiment with new models and setups
2. Data Augmentation
3. Identify alternative betting targets
4. Further development of portfolio visualizations

# THANK YOU