

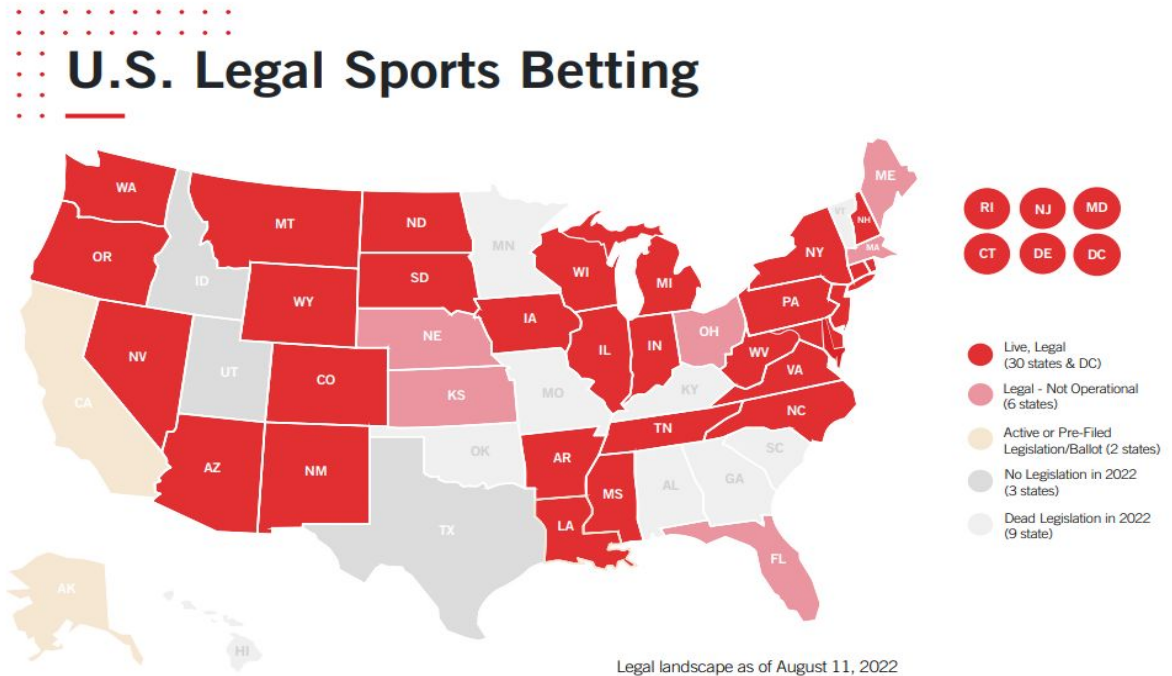


MLB Betting Model

Ryan Pedersen

Background Info

- Professional and Amateur Sports Protection Act passed in 1992 that made sports gambling illegal in all states except Nevada
- Federally legalized in 2018 by the Supreme Court
- Sports betting has grown massively in popularity the past few years.



Betting Lines Example

		Runline	Win	Total
8/16/22 3:40 PM	Philadelphia Phillies Kyle Gibson (R) ————— + 110 Bets >	-1.5 (-120)	-180	O 9.0 (-115)
	Cincinnati Reds T.J. Zeuch (R)	+1.5 (EVEN)	+148	U 9.0 (-105)
8/16/22 3:40 PM	San Diego Padres Sean Manaea (L) ————— + 110 Bets >	-1.5 (+115)	-155	O 7.0 (-125)
	Miami Marlins Edward Cabrera (R)	+1.5 (-135)	+130	U 7.0 (+105)
8/16/22 4:05 PM	Boston Red Sox Nick Pivetta (R) ————— + 111 Bets >	-1.5 (+120)	-145	O 8.5 (-105)
	Pittsburgh Pirates Mitch Keller (R)	+1.5 (-140)	+122	U 8.5 (-115)

Process

01

Data Acquisition

How all of the data was gathered

02

Modeling

Type of model used, features

03

Utilization

What to do with the predictions

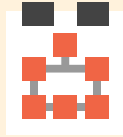


01

Data Acquisition



Data Sources



Fangraphs

Used pybaseball wrapper to pull game logs, batting and pitching stats



MLB.com

Scraped mlb.com probable pitchers page to get daily games and the starting pitchers.



Betting sites

Used the-odds-api to pull odds from various betting sites



Sample of Statistics Used

Stat name	Description	Player type
BA	Hits divided by at-bats	Batter
wRC+	Weighted runs created plus	Batter
ERA	Earned Runs allowed per 9 innings	Pitcher
WHIP	Walks plus hits per inning pitched	Pitcher

02 Modeling



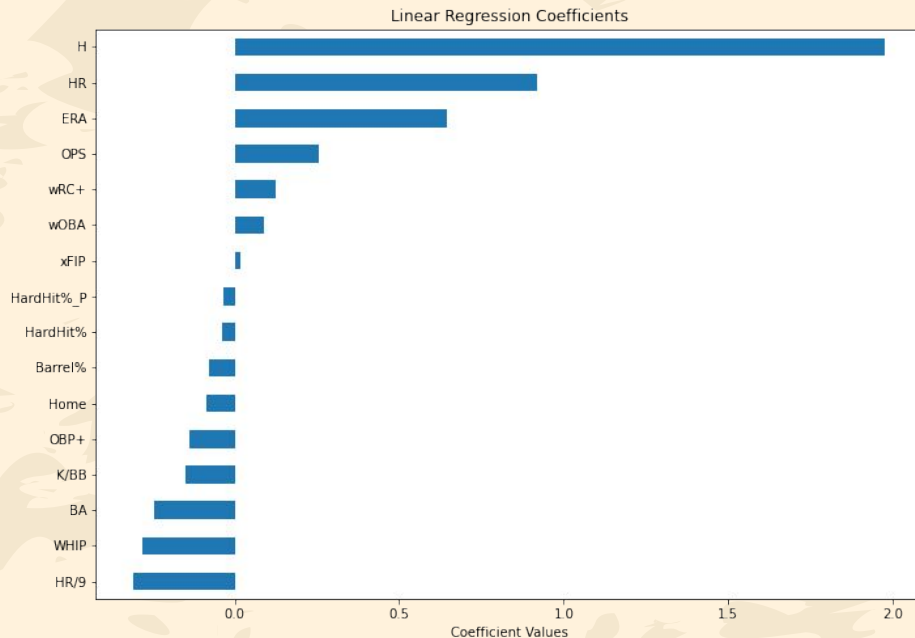
Modeling Info

- Model chosen: Linear Regression
- Random Forest also considered
- 21 features used
- Use game logs from Fangraphs to train model



Model Metrics

Metric	Value
Training r2	0.69
Testing r2	0.71
Testing MSE	2.95

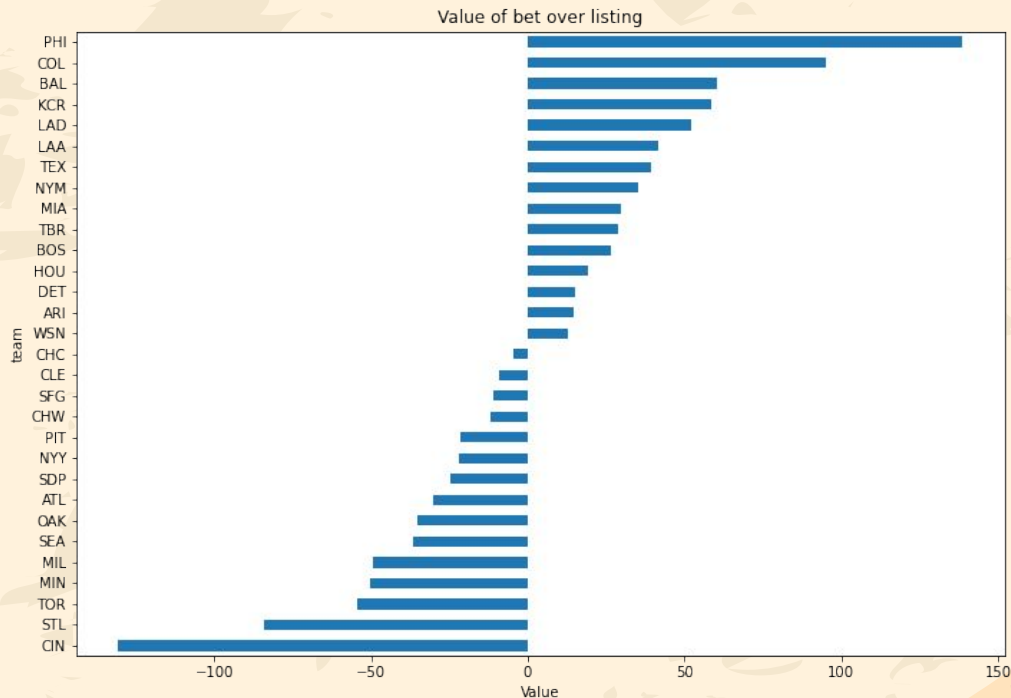


03 Utilization



Moneyline bets

- Scrape daily games and probable pitchers from mlb.com
- Build prediction dataframe
- Get predicted scores
- Generate odds
- Compare to sportsbook odds pulled from the-odds-api








7/10 Bets Won

The background features a large white oval with a cracked texture, set against a light orange field with white diagonal lines. Several red stars are scattered around the oval. On the left, a baseball player in a purple uniform with a red cap is celebrating with one leg raised. On the right, a baseball player in a purple uniform with a red cap is sliding on the ground. The text '7/10 Bets Won' is prominently displayed in the center of the oval.

So far.....



Conclusion and Next Steps

- Time is needed to fully understand the performance of the model relative to bookmakers
 - Early returns are good, sample size too small.
 - Generate daily predictions
 - Assess model performance over the course of a month
 - Add more features
 - Player value coefficient
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Thanks!

Any questions?

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