

AVC Midpoint Deck

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Highlights

1. Betting every MLB game is a fool's path (down \$1900). Betting the model's top pick(s) from each day is holding up nicely (up \$1000). Flipping coins would garner a 50% winning percentage in the long run. I have a working model using daily data and have been tracking since April 1.
2. Model performance has been ~RMSE 4.00 runs per game each day (baseball games average about 8 or 9 runs per game, so predicting baseball outcomes is extremely difficult). The tuned daily random forest averages about $R\text{-sq} = 0.300$. Wagering on sports is notoriously difficult - predicting outcomes is near impossible - just ask any sport gambler.

Stories

Completed: Pull API, put data on S3, clean and manipulate data, develop tuned random forest in SciKit-Learn, determine reasonable test / train, running on EC2 and S3, implemented a local SQLite database on EC2.

Still to do: Write tests, comment, log, move SQLite to RDS, get reports.py to pull from database and not csv, get Flask app working.

Demo: Admin

```
(Baseball) ubuntu@ip-172-31-25-50:~/Baseball/src$ python main_menu.py
```

```
Baseball Gambling Tool Main Menu
```

```
Enter 1 for Admin Mode
Enter 2 for User Mode
Enter 3 to Quit
```

```
Choice: 1
```

```
Enter 1 for API Pull (Only Do This Once Per Day)
Enter 2 to Input Today's Betting Lines (And Runs Random Forest)
Enter 3 to Input Past Game Results (Presumes Model Already Built Yesterday)
Enter 4 to Return to Main Menu
Enter 5 to Quit Program
```

```
Choice: 2
```

```
Serving up today's model, so wait about 10 minutes, OK?
```

```
Today's random forest model parameters:
```

```
Number of Estimators: 1755
```

```
Bootstrap: True
```

```
Maximum Depth: 100
```

```
Maximum Features: sqrt
```

```
Minimum Samples per Leaf: 5
```

```
Minimum Samples per Split: 2
```

```
The tuned model from 5-13 using all available variables has RMSE = 3.556328367021896
```

```
The tuned model from 5-13 using all available variables has R-Squared = 0.3853192174671647
```

	away	home	month	day	predicted.runs
0	LAA	MIN	5	13	10.413971
1	HOU	DET	5	13	9.607910
3	CLE	CWS	5	13	9.488428
4	MIL	PHI	5	13	9.834124
5	OAK	SEA	5	13	9.603242
6	PIT	ARI	5	13	9.141679

Demo: User

```
Choice: 2
```

```
Profit / Loss Report for the 2019 season:
(Each bet is $100)
```

```
Only bet the 10-star pick each day: $1000
```

```
Total Bets: 54
```

```
Winning Percentage: 60.0%
```

```
Bet every single game every day: $-1900
```

```
Total Bets: 393
```

```
Winning Percentage: 47.45%
```

```
Choice: 1
```

```
View Gambling Picks:
```

```
Give the month as 4, 5, 6, 7, 8, or 9: 5
```

```
Give the day as 1, 2, ..., 29, 30, or 31: 13
```

```
Sorted from best to worst for 5/13
```

	away	home	bookie	the.bet
0	MIL	PHI	8.0	OVER
1	PIT	ARI	9.0	UNDER
2	OAK	SEA	9.0	UNDER
3	HOU	DET	8.5	OVER
4	LAA	MIN	9.0	OVER
5	CLE	CWS	8.5	UNDER

Lessons Learned

There are too many technologies for one person to master them all.

Recommendations

Need to implement logging and testing and commenting.

Need to get RDS data uploaded and my reports pulling from that cloud DB.

Need to figure out config files so my project is reproducible.