

THE EARLIER THE CHEAPER? HOUSTON ROCKETS TICKETS ANALYSIS

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MENTOR

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DATA

- 16-17 to 18-19 transaction records (~5 million records)
- Both primary market and secondary market (Flash Seats)

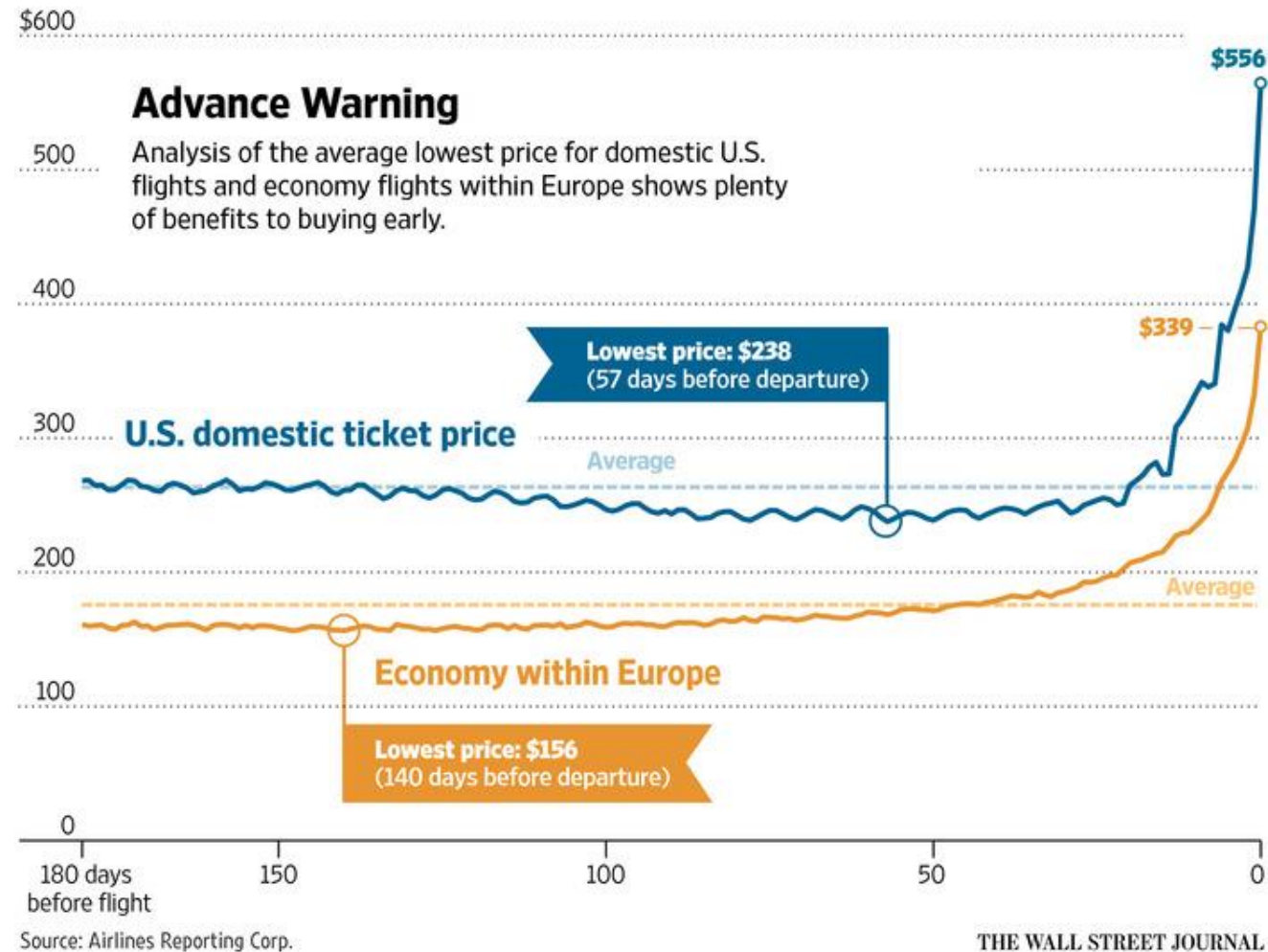


FACTORS THAT INFLUENCE TICKET PRICE

- Seat Position
- Opponent
- Match Time (Month, Day/Night, Holidays)
- **When to buy tickets (Days to Event)**
- Team Performance
- Peer Event (Texans, Astros)

ASSUMPTIONS

- Similar with airplane tickets
- Days to event -- → Price ++



METHOD

- Jupyter Notebook (Python)
 - Numpy, Pandas, Matplotlib, Sklearn
- Controlled variable: section
- Independent variable: days to event
- Dependent variable: price
- Compute avg. price for each section
- Create a nested map: {section: {days to event: price}}
- Regression & modeling

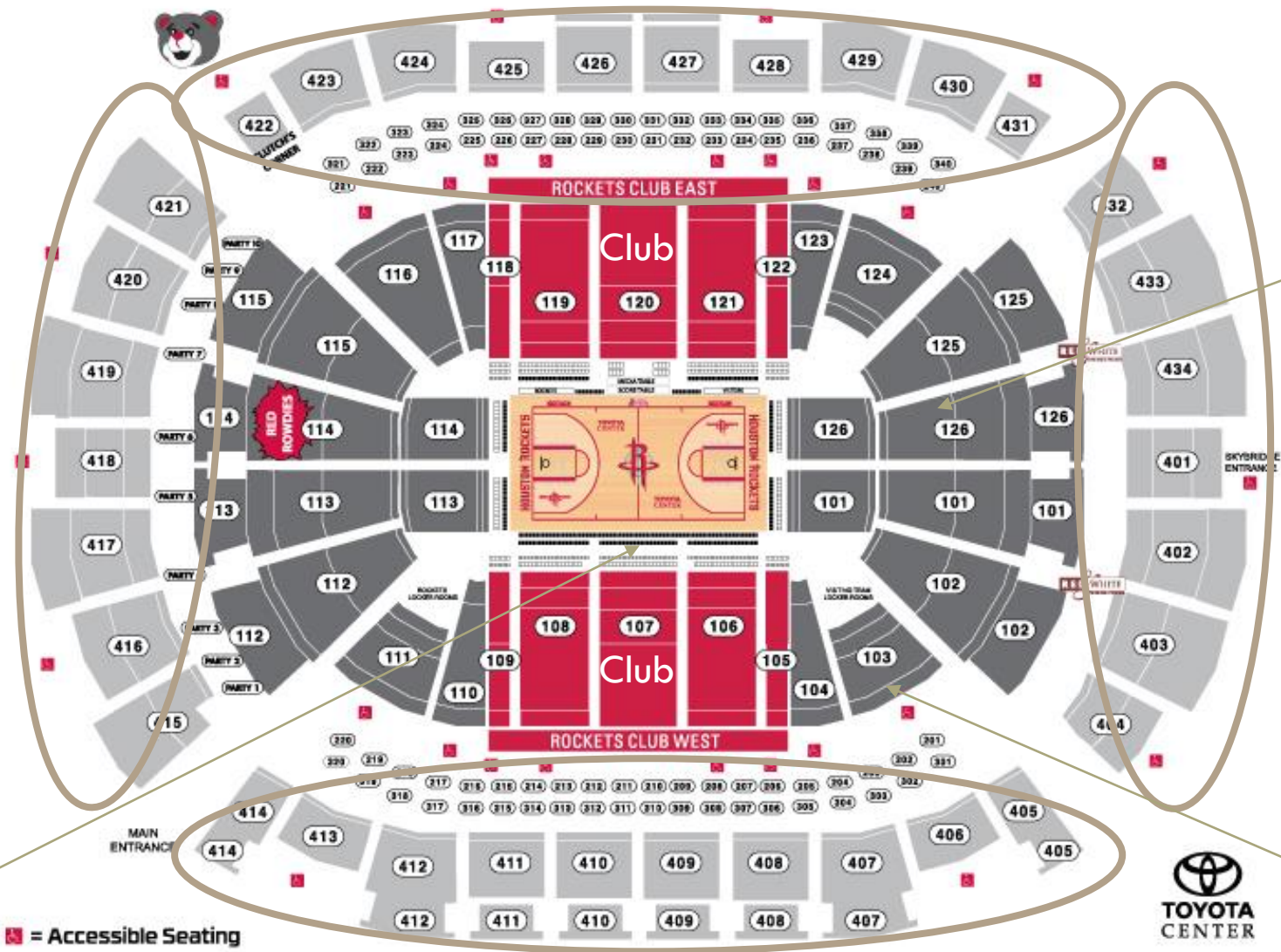
Upper Sideline

Lower Endzone

Upper Endzone

Lower Corner

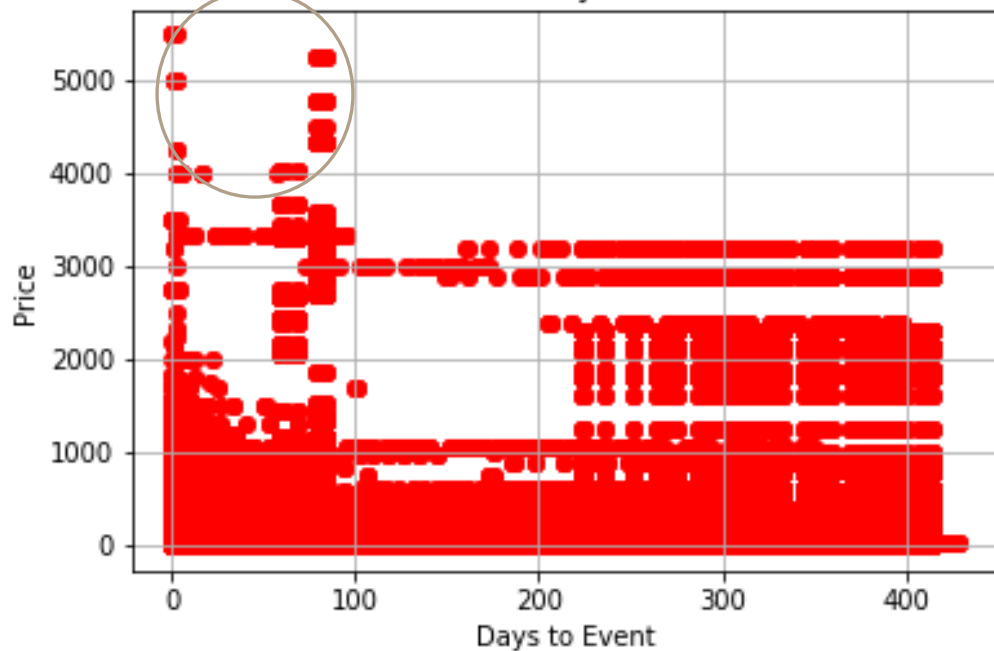
Upper Sideline



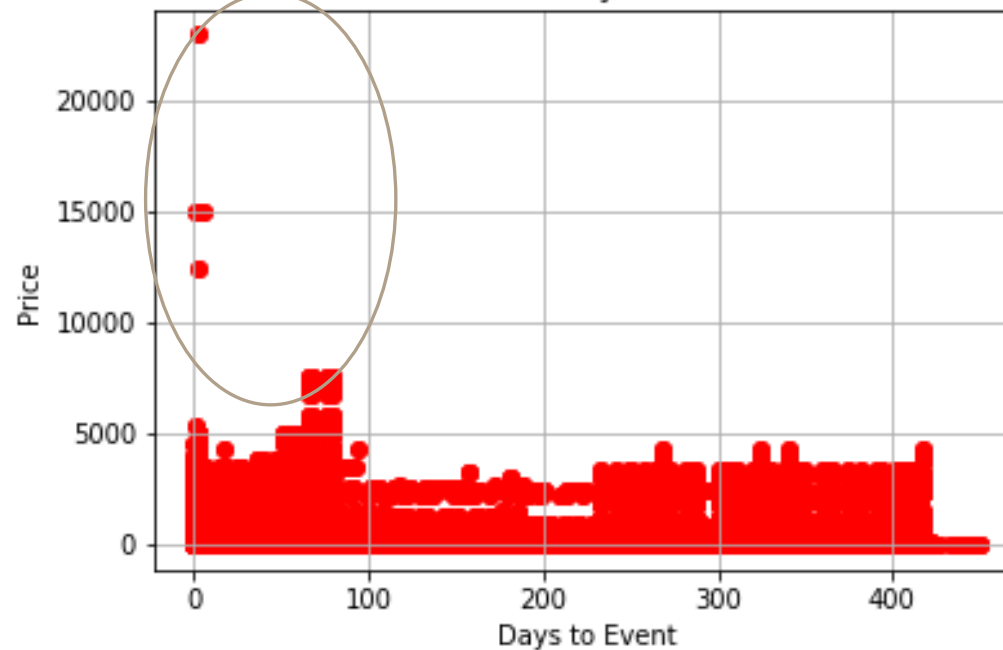
Premium (courtside, ledge dining, VIP)

FIRST LOOK

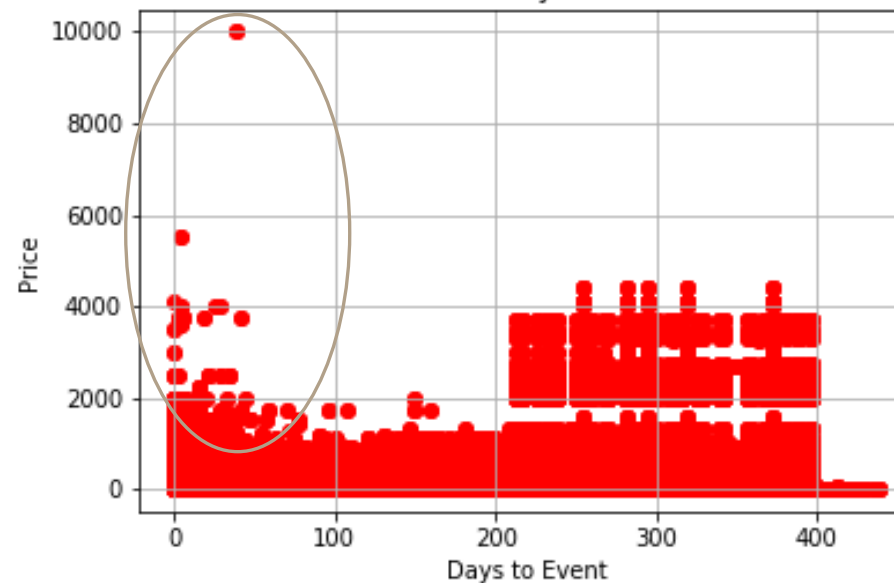
Rockets 16-17 Season Days to Event vs Price Plot



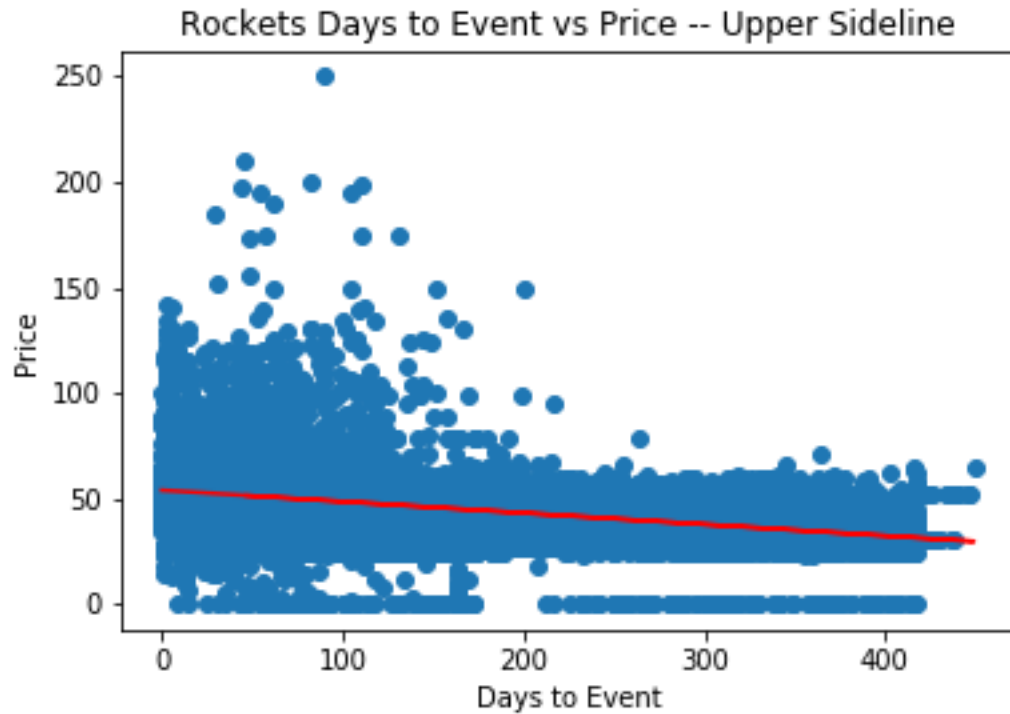
Rockets 17-18 Season Days to Event vs Price Plot



Rockets 18-19 Season Days to Event vs Price Plot

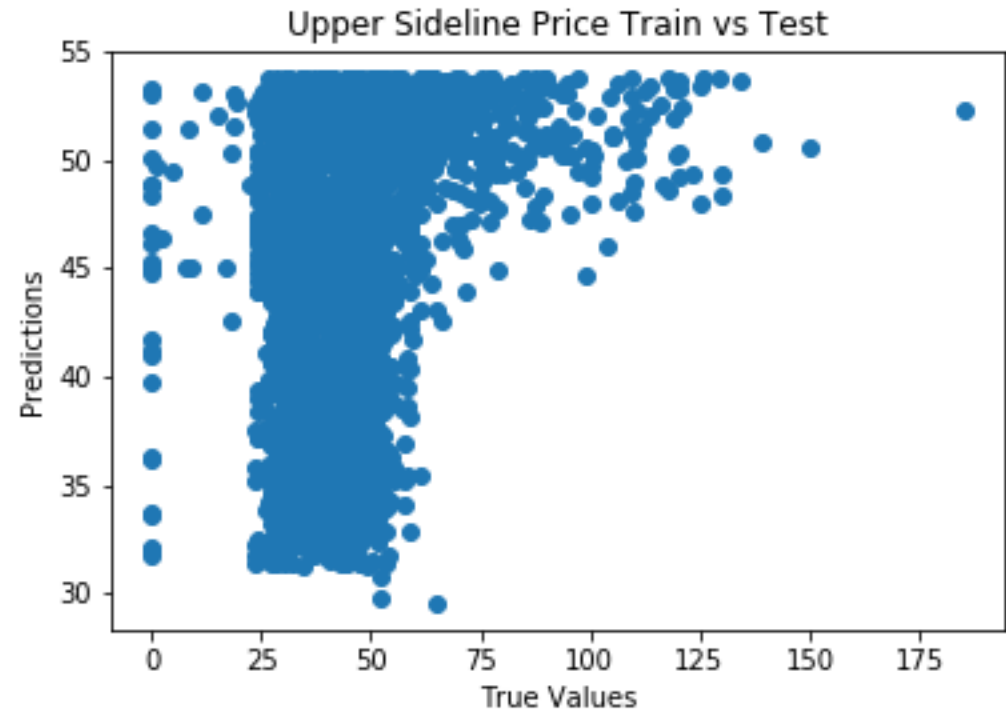


UPPER SIDELINE

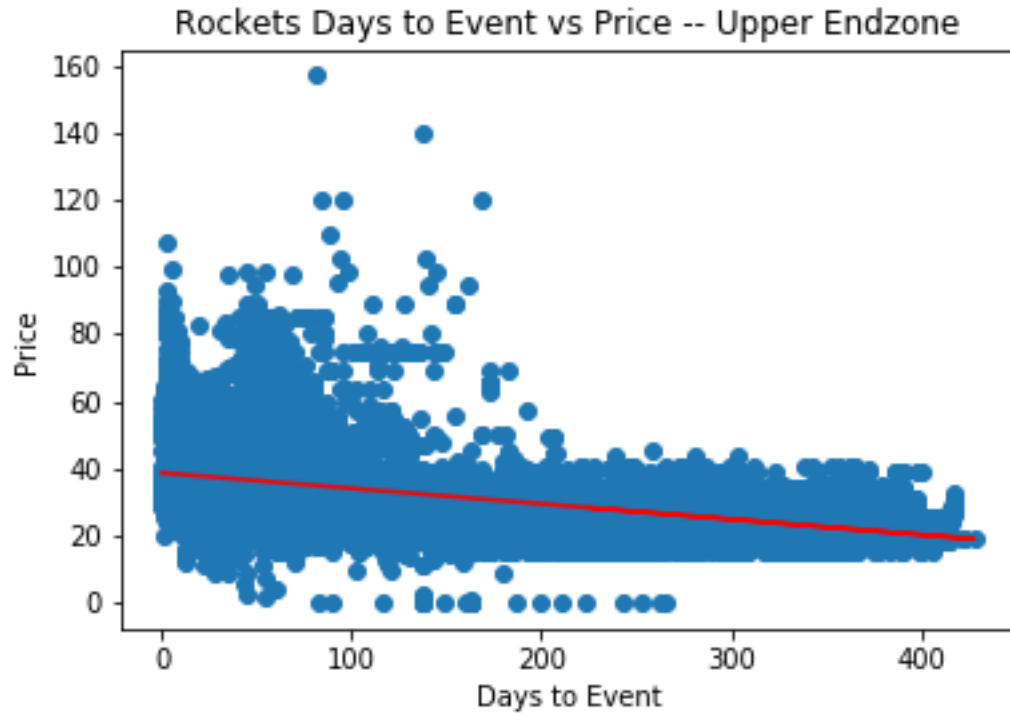


$$y = -0.054x + 53.82$$

Prediction score = 0.172

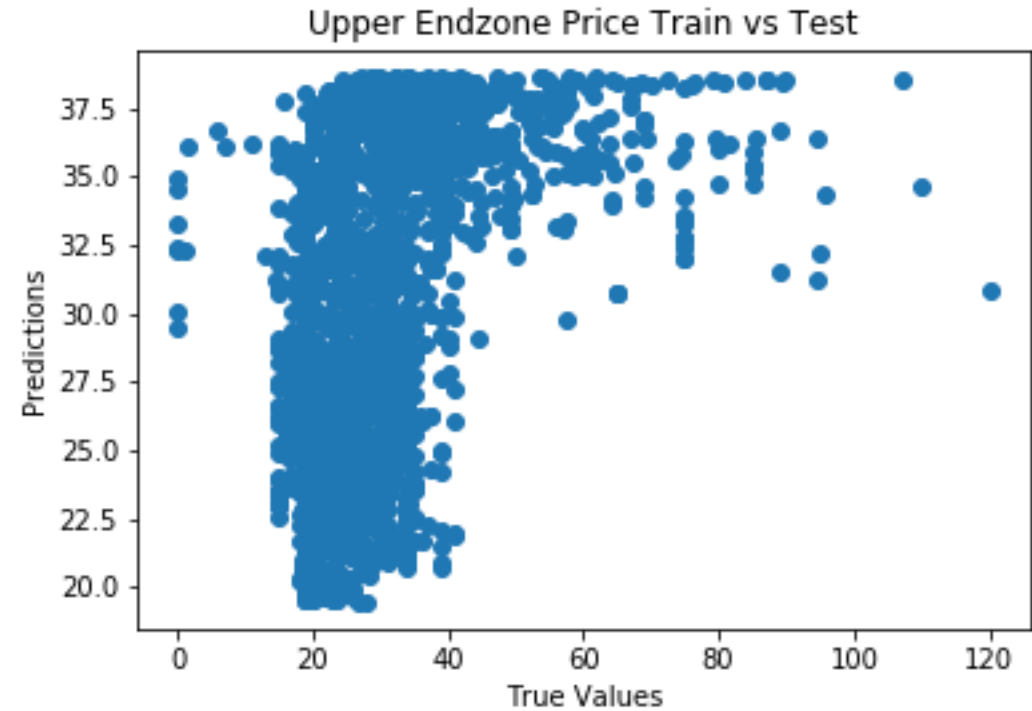


UPPER ENDZONE

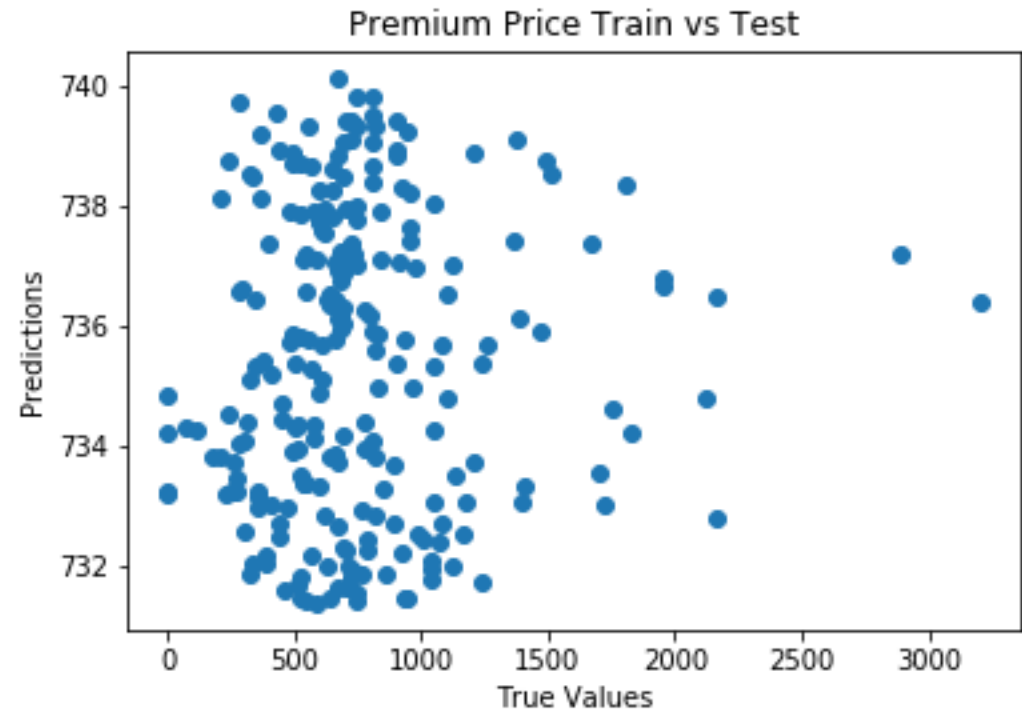
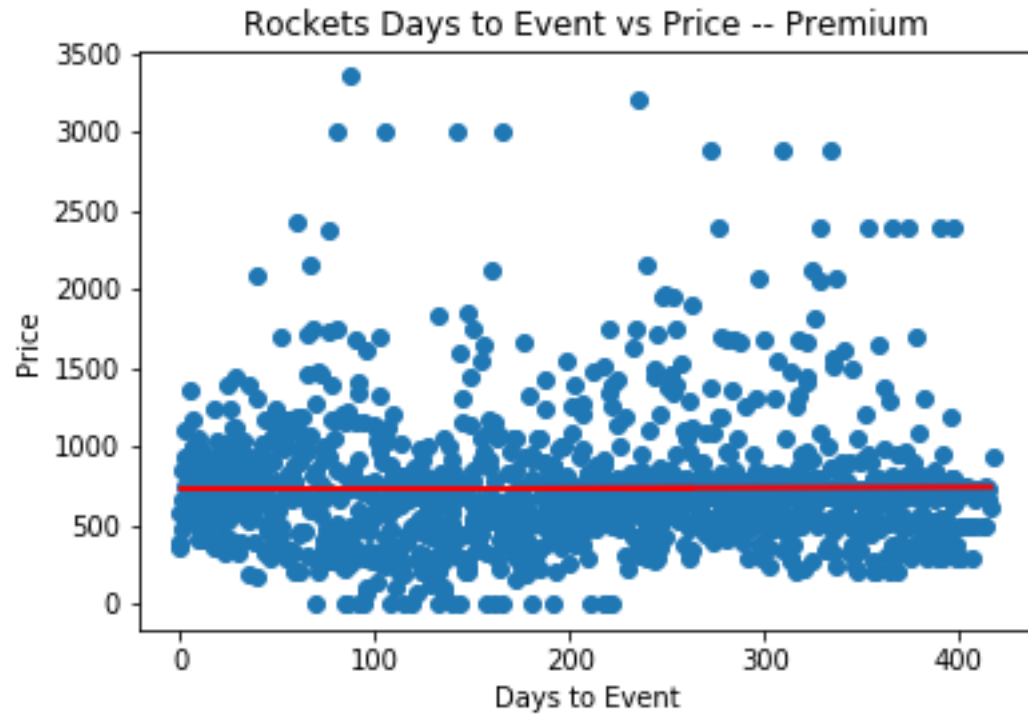


$$y = -0.046x + 38.68$$

Prediction score = -0.521



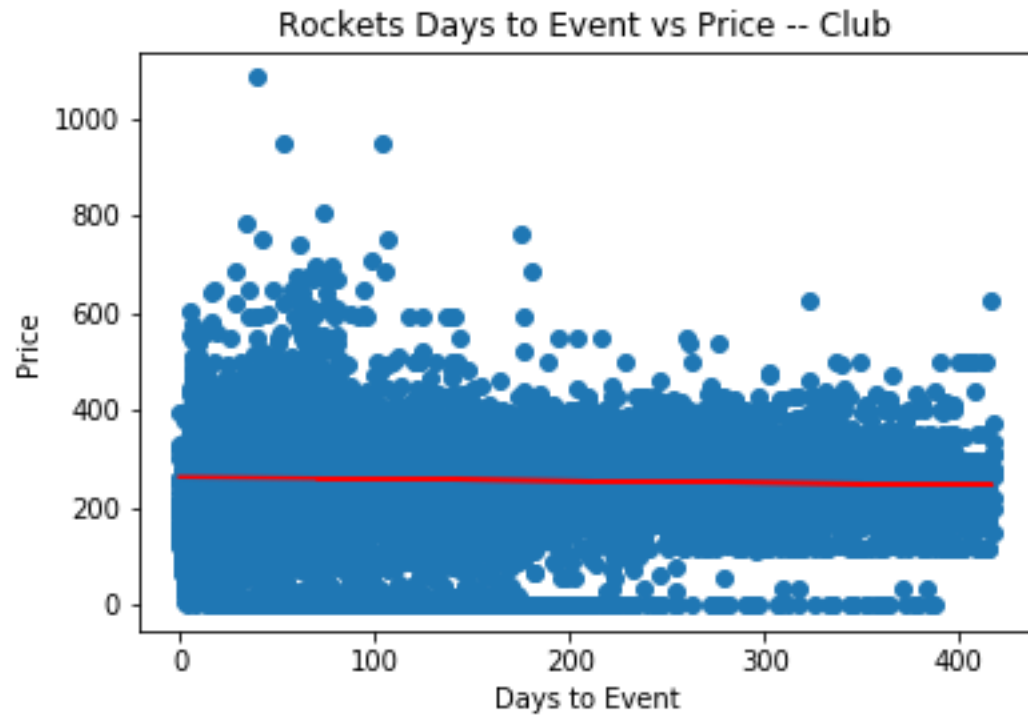
PREMIUM



$$y = 0.021x + 731.4$$

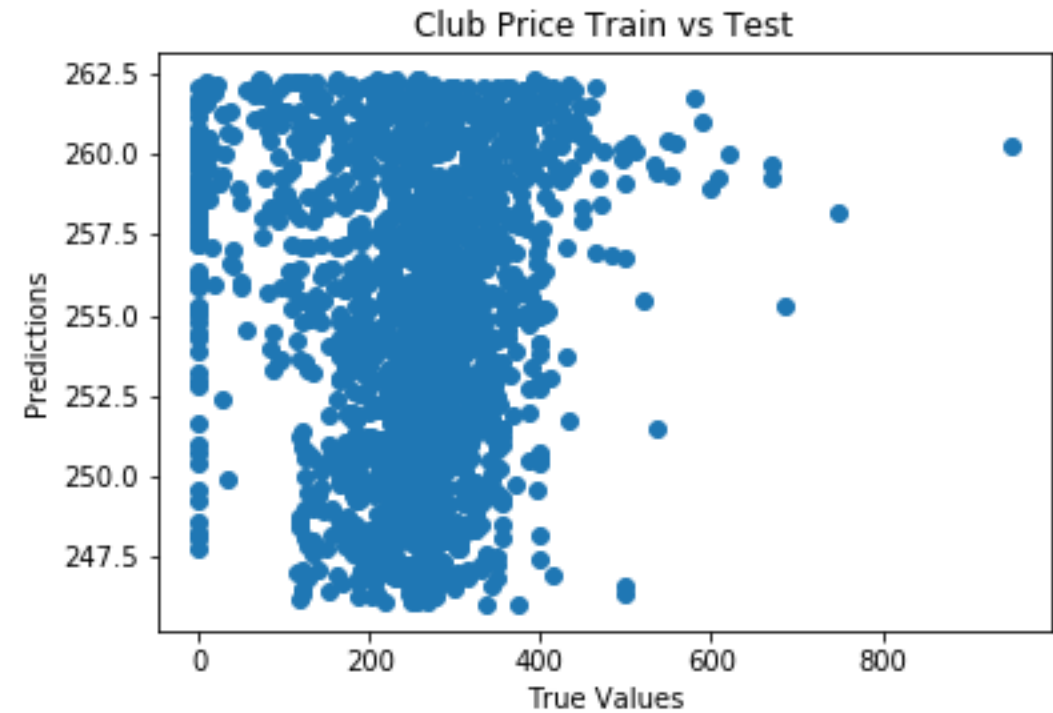
Prediction score = -0.002

CLUB

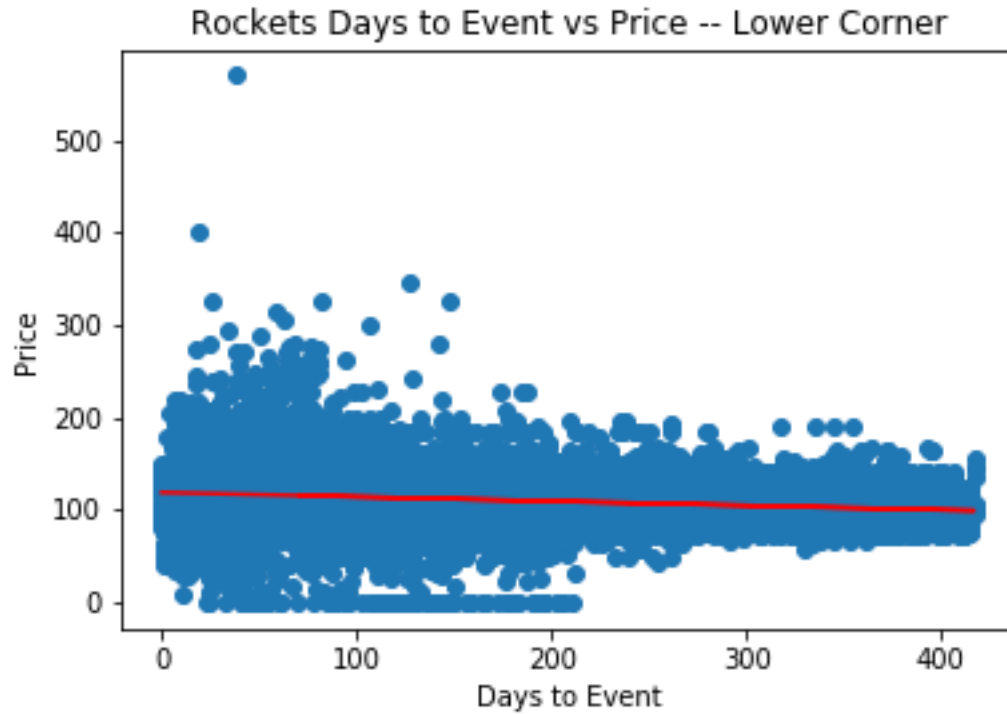


$$y = -0.039x + 262.4$$

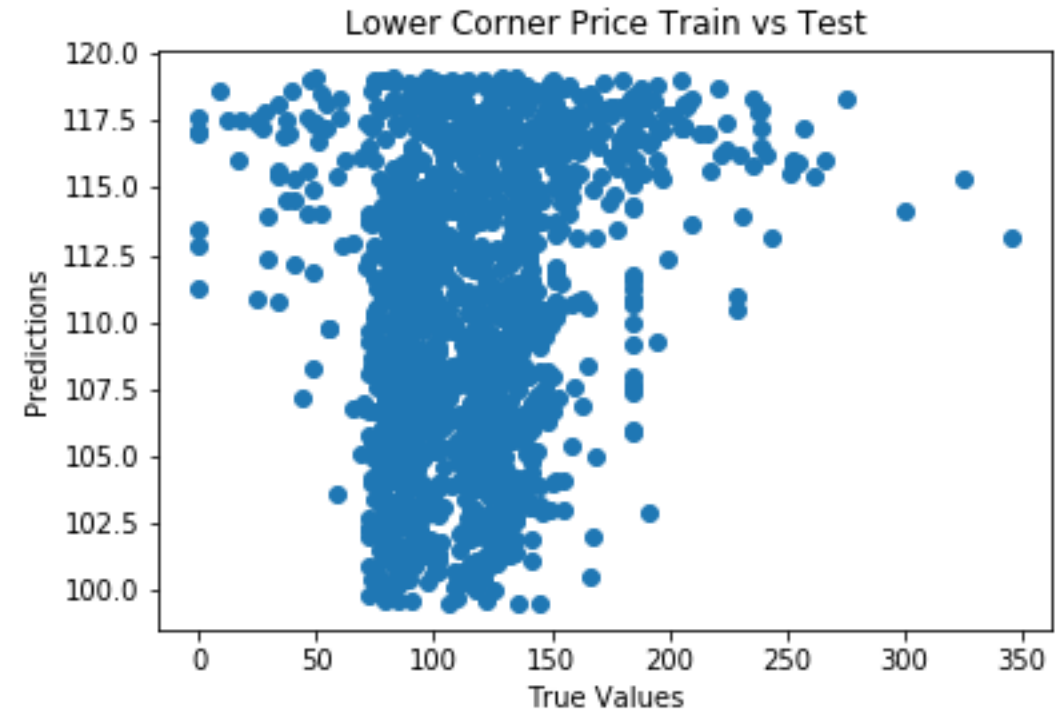
Prediction score = -0.003



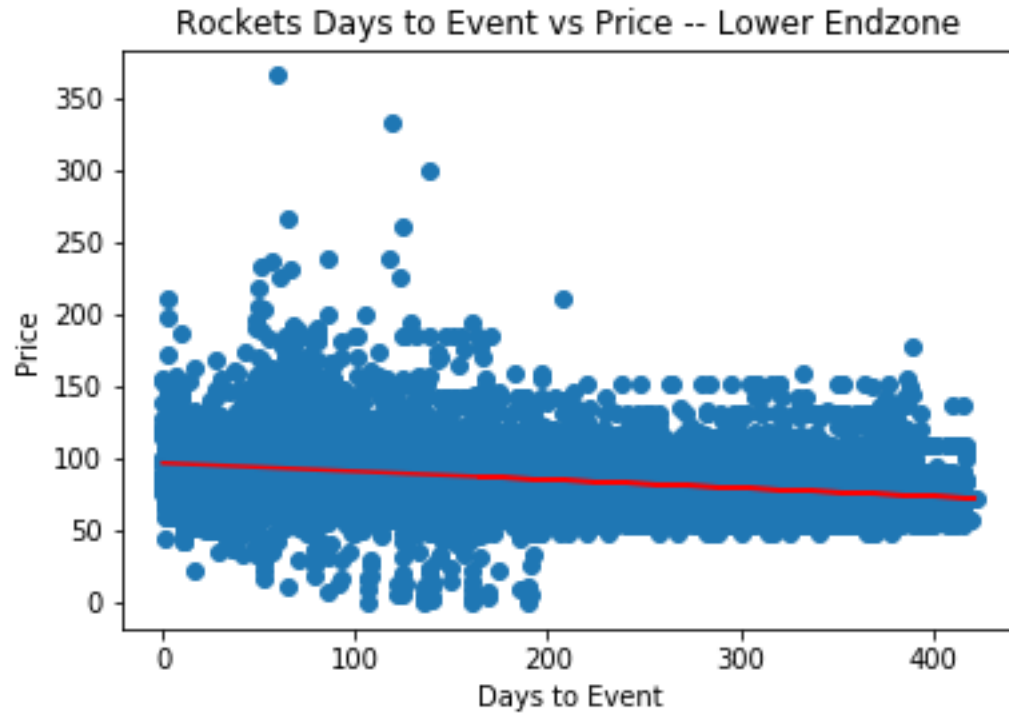
LOWER CORNER



$y = -0.047x + 119.15$
Prediction score = 0.028

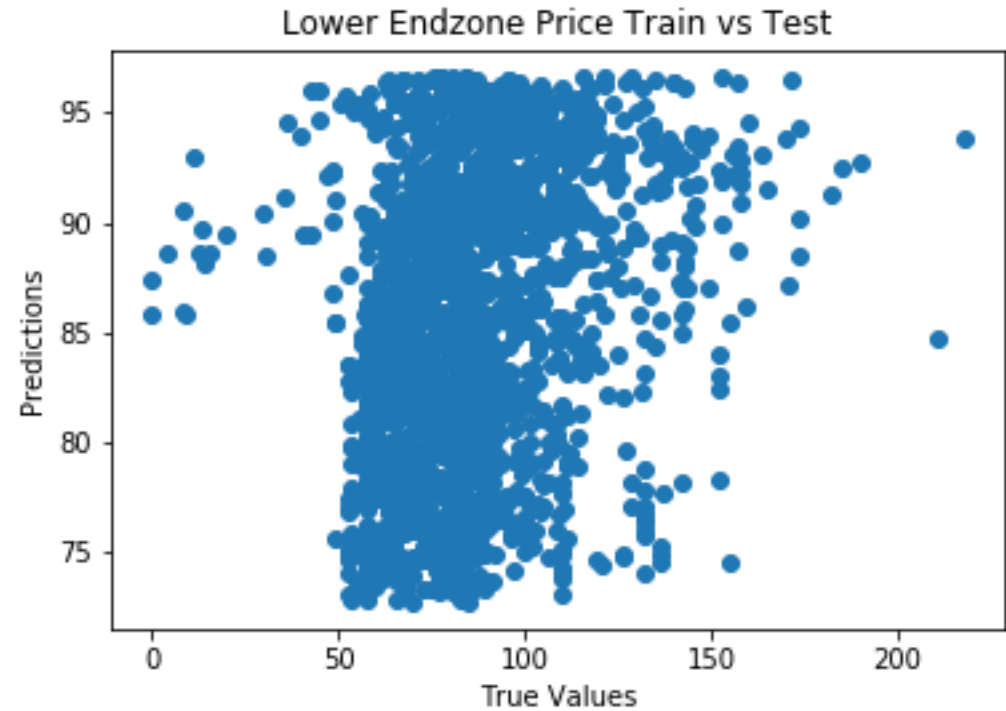


LOWER ENDZONE



$$y = -0.058x + 96.7$$

Prediction score = 0.067



COEFFICIENT

- From high to low in terms of absolute values:
 - Lower Endzone
 - Upper Sideline
 - Lower Corner
 - Upper Endzone
 - Club
 - Premium (positive)
-
- Generally not hugely significant alone

MODELING SCORE

- Upper Sideline
 - Lower Endzone
 - Lower Corner
-
- Premium
 - Club
 - Upper Endzone

CONCLUSION

- Weak relationship standing alone
- Proves assumption
- Take other factors into regression would make the model much more accurate
 - Difficulty: how to quantify seat location advantage, how to rank opponent
- Ideal outcome: given Days to Event, Section and Opponent, output “standard” prize