

Taking on the House: NFL Over/Under Predictor

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NFL Betting Background



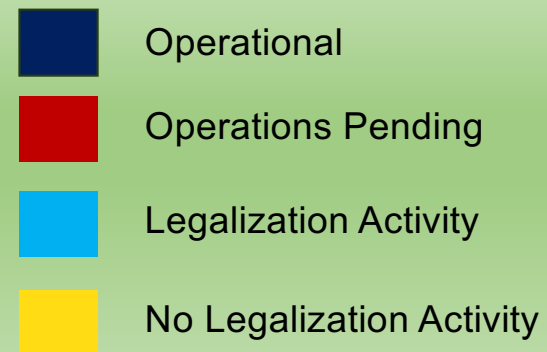
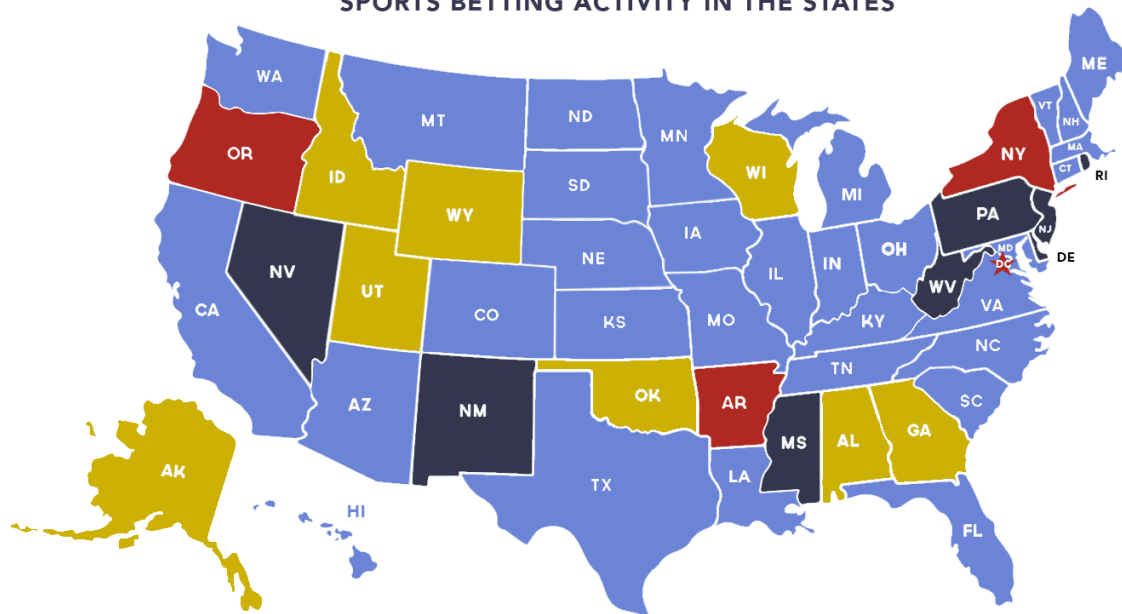
- Key Terms
 - Over/Under, or Total
 - Handicapper
 - Bettor
- Super Bowl LIV
 - SF 20 – 31 KC
 - Total = 51 Points
 - Winning Pick: Under



Sports Gambling Industry



SPORTS BETTING ACTIVITY IN THE STATES



Companies

- Draftkings
- Fanuel
- MGM Resort



Business Goals

01

Handicapper

- Understand the important features determining Over/Under

02

Bettor

- Help make more informed decisions when betting the Totals

Data



Sourced from Kaggle

- Betting Data
- 1979 Cutoff



Web Scraped from www.pro-football-reference.com

- Team Statistics



Final DataFrame

- 31 Columns
- 10,000 Rows



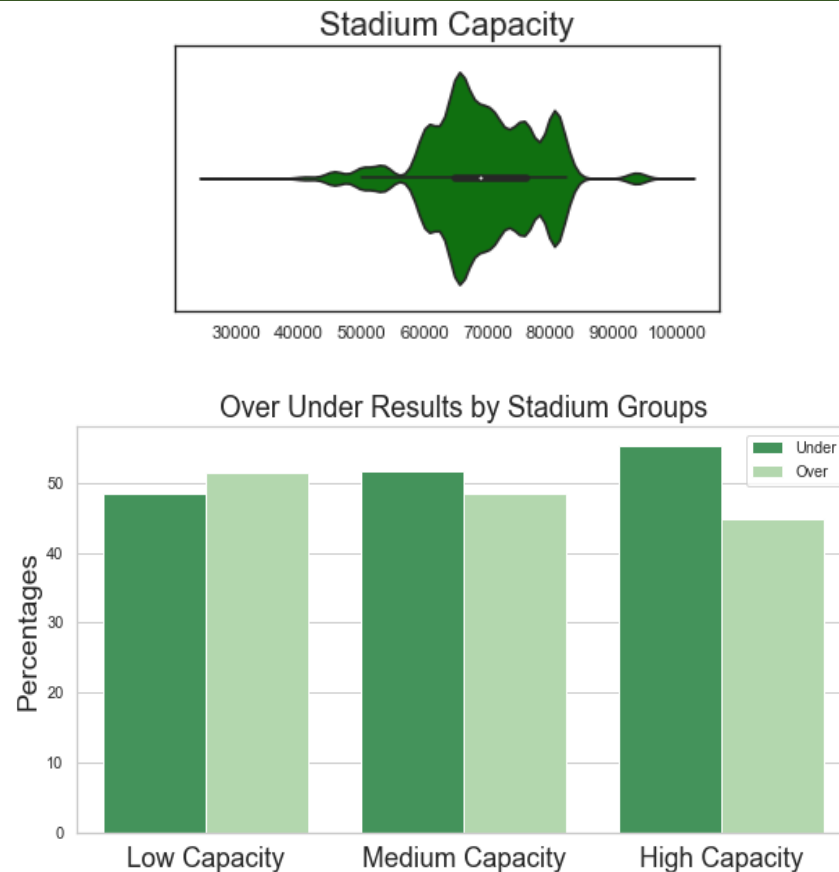
Target Variable

- Over/Under Result
 - 4853 Under (48%)
 - 4552 Over (52%)

Feature Categories

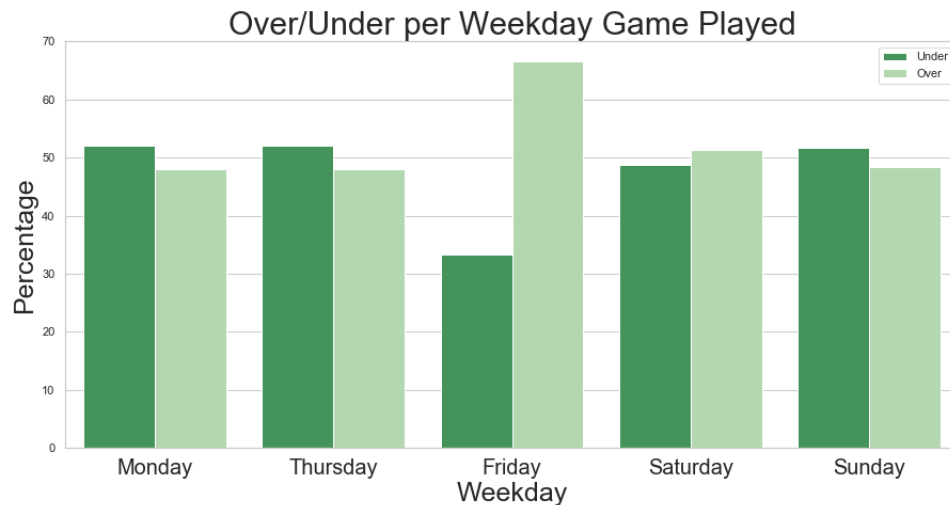


Setting Features



- Stadium
 - Capacity
 - Surface
 - Roof Type
 - Neutral Location

Setting Features



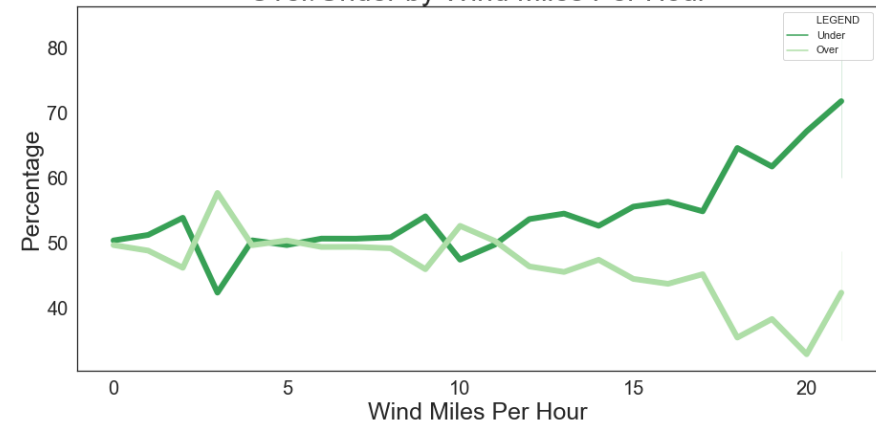
- City
 - Elevation
 - Distance Traveled
- Time
 - Day
 - Week
 - Playoffs

Weather Features

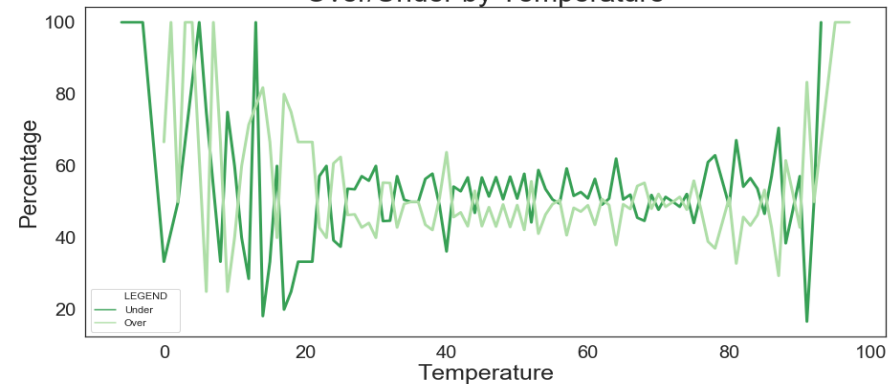


- Wind
- Temperature
- Humidity

Over/Under by Wind Miles Per Hour



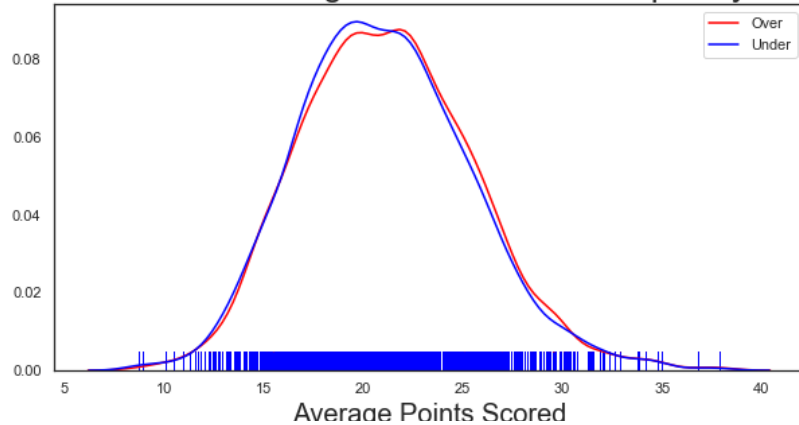
Over/Under by Temperature



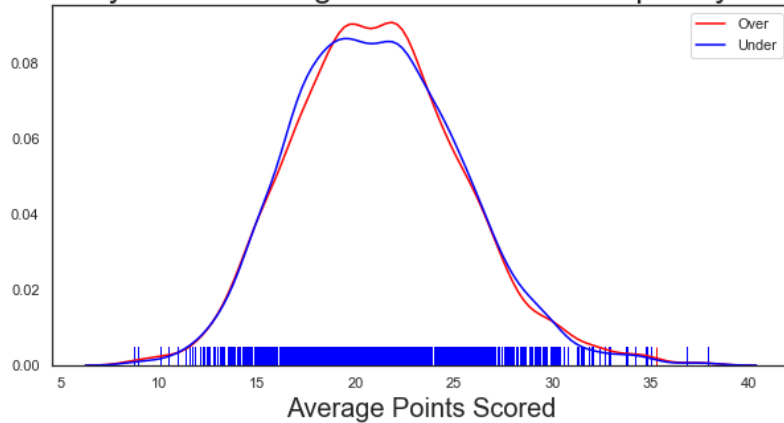
Team Statistics



Home Team Average Points Scored Frequency Plot



Away Team Average Points Scored Frequency Plot



W-L%

Win - Loss Percentage

PF & PA

Points Scored by Team

Points Scored Against Team

PD

Points Differential

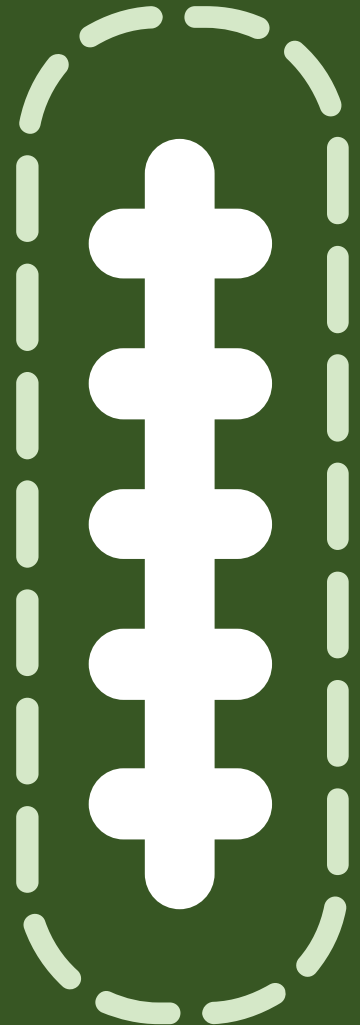
MoV

Margin of Victory

OSRS & DSRS

Offensive Rating

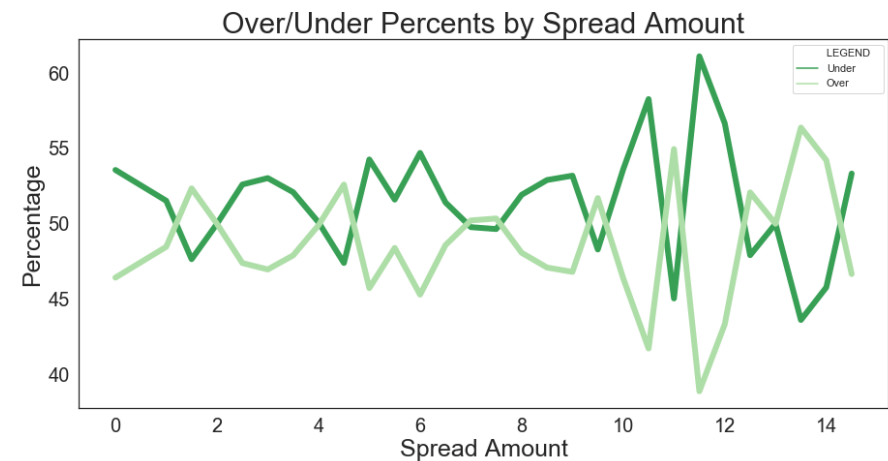
Defensive Rating



Betting Features



- Spread
- Predicted Over/Under
- Odds to Win the Superbowl



Modeling Methodology



Clean Data



Feature Engineer



Feature Selection

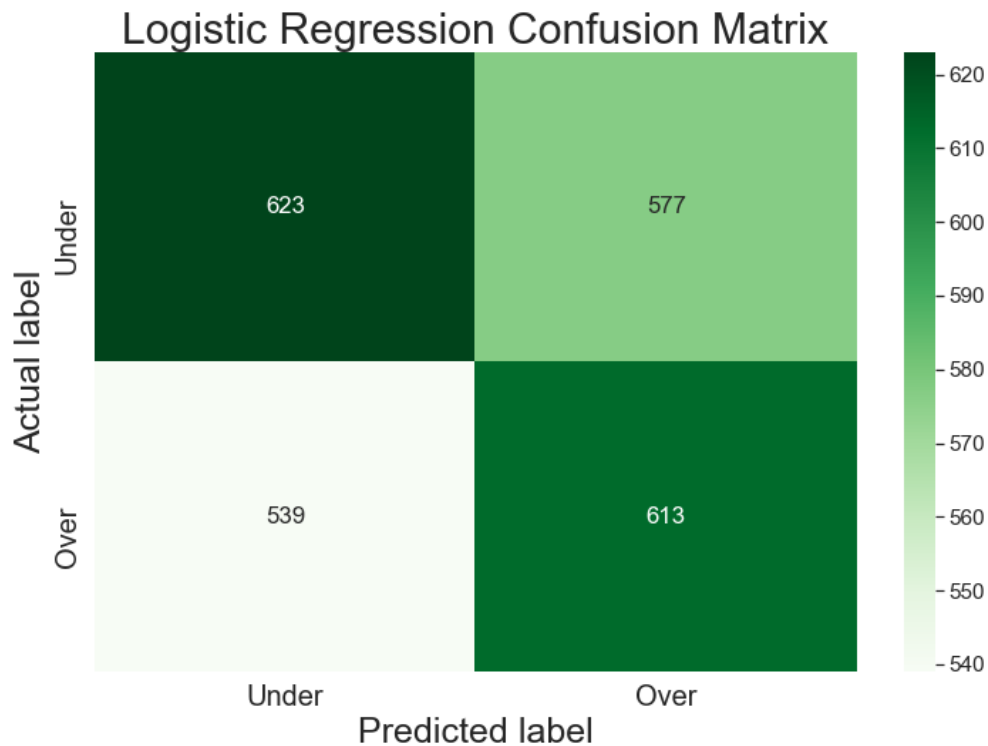


Model



Evaluate

Model Evaluation



- Metric
 - F1 Score
- Results
 - 52%
- Key Takeaways

Next Steps

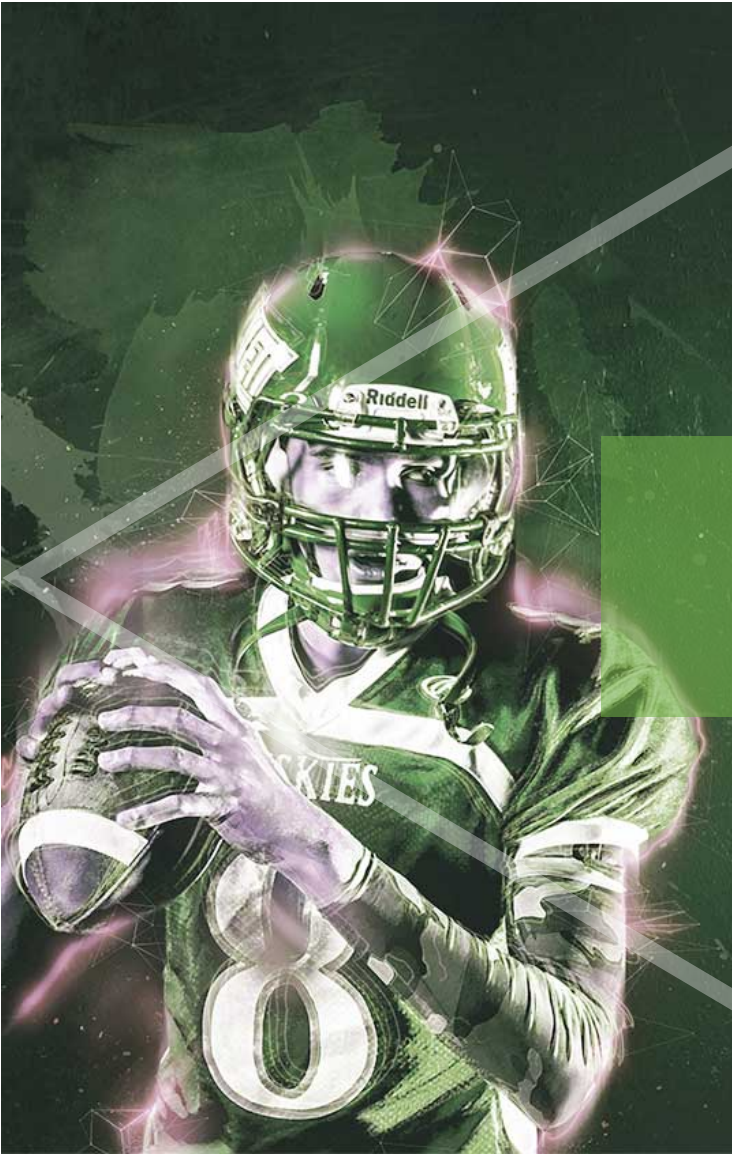


Tune Model

Weather Data

In-Season Data

Implementation



Business Conclusion

- Handicapper
- Bettor



Thank you