

UFC Sports Analytics & Prediction



Team Octagoners

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Motivation & Goal

Topic: UFC fighting

- Wanted to do sports analytics & prediction
- Less common sport to analyze compared to NBA, NFL, National League, etc
- A lot of predictors available that we could explore

Goal:

- Our goal of this project is to enhance our statistical knowledge & experience by answering some of the research questions, performing advanced player analytics, and applying predictive models to predict the winners

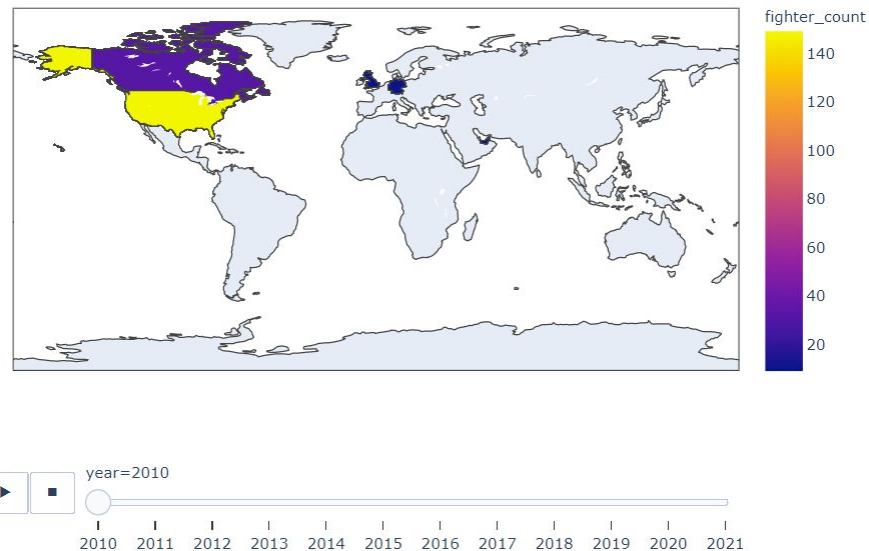
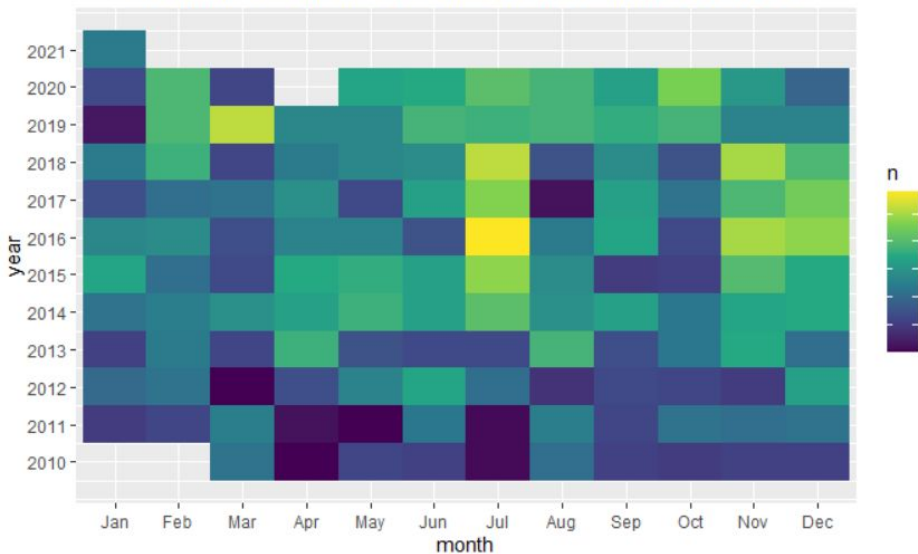
Findings 1. Research Questions

1. How has UFC grown in recent years?

Interactive Map available here:

<https://chart-studio.plotly.com/~hanaylim/1/#/>

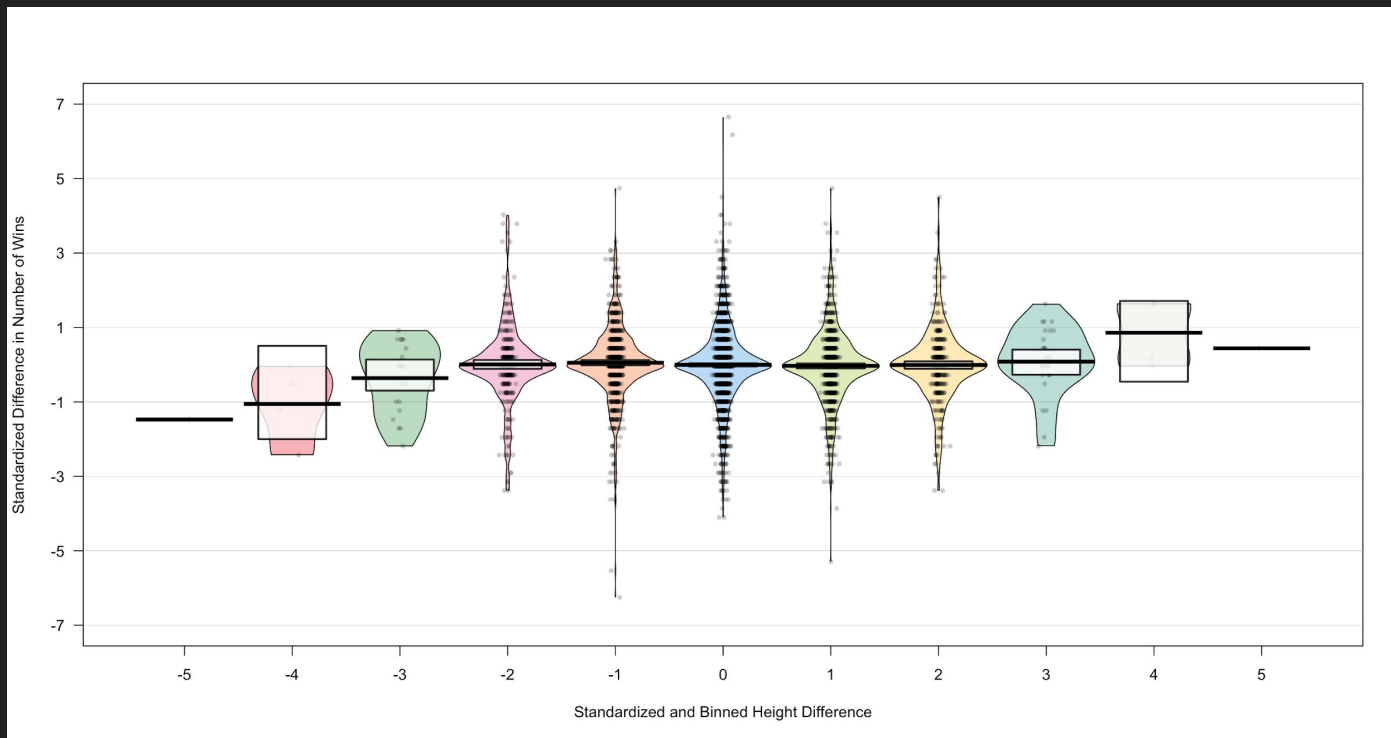
Heatmap of frequencies of the game for the past decade



Findings

1. Research Questions

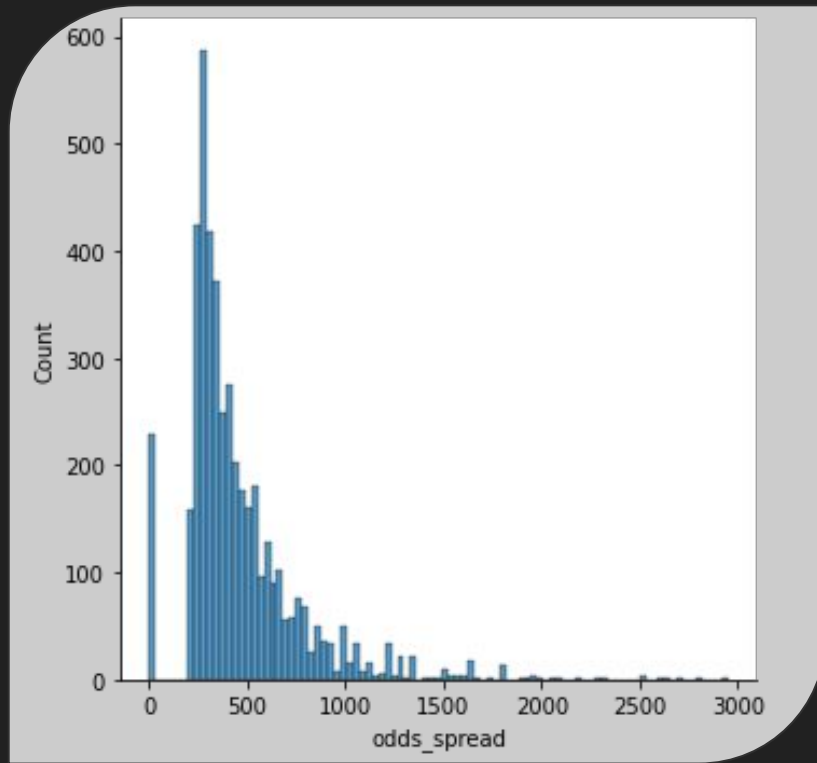
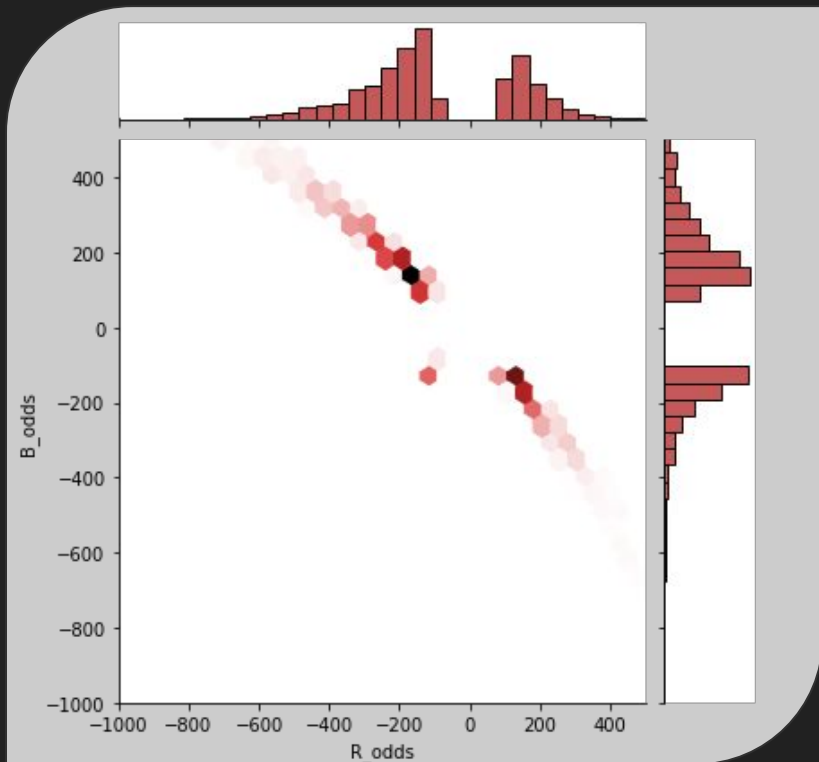
2. What makes a fighter more likely to win?



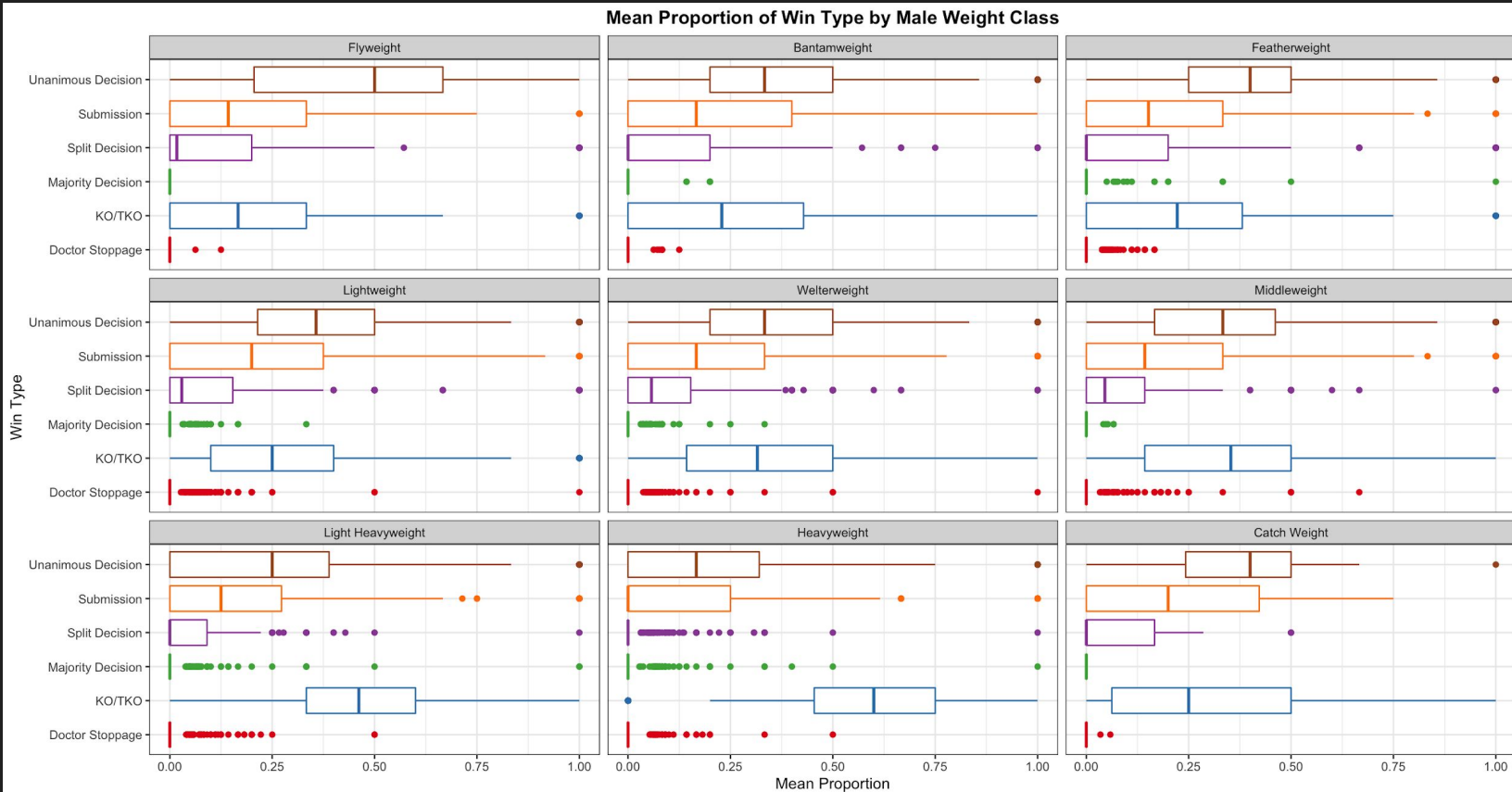
Findings

1. Research Questions

3. Explanation and Observation of Betting Odds

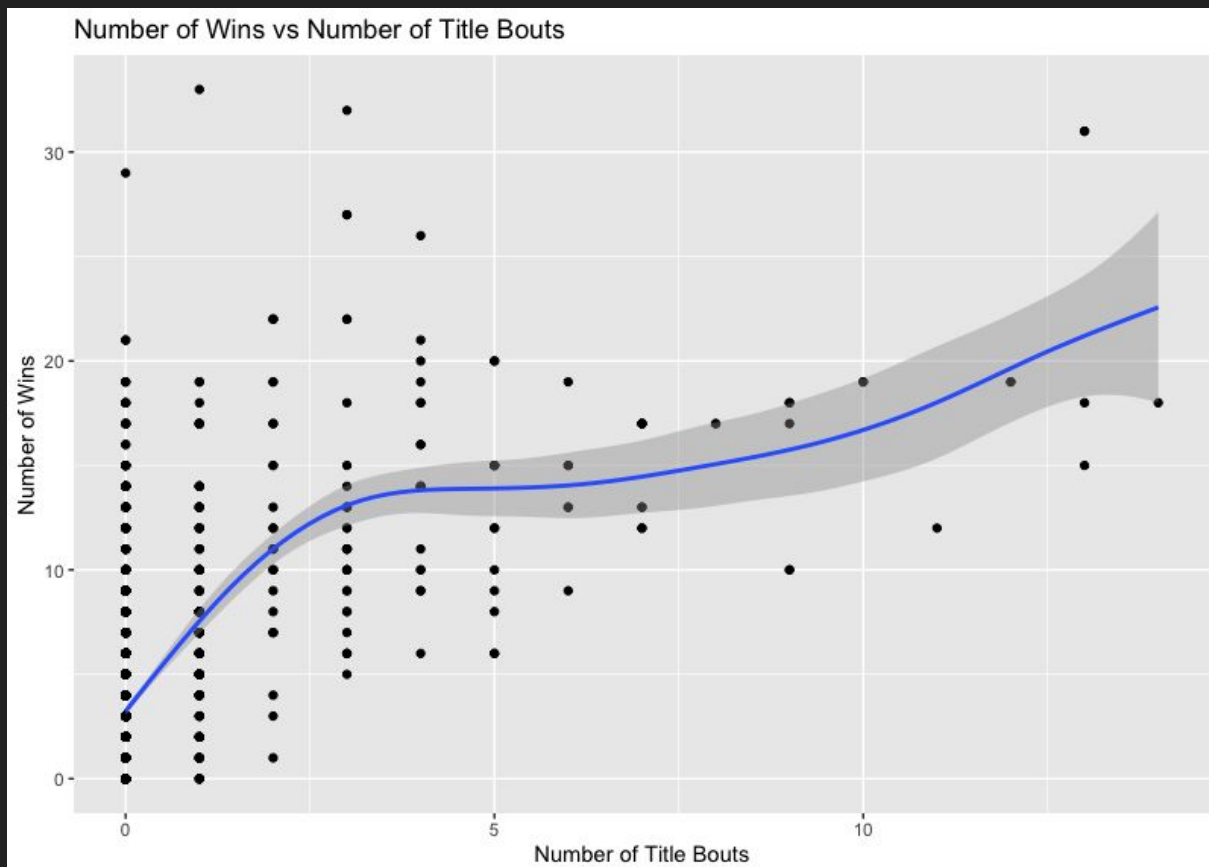


Findings 2. Advanced Player Analysis



Findings

2. Advanced Player Analysis



Findings

3. Predictive Models

Summary Table

| Classification Method | Accuracy | Notes |
|------------------------|----------|-------------------|
| Logistic Regression | 0.8440 | |
| K-nearest neighbors | 0.7052 | |
| Support Vector Machine | 0.8817 | Kernel = "radial" |
| Decision Trees | 0.8718 | Max_depth = 26 |
| Random Forest | 0.8688 | varImp > 10 |
| Neural Network | 0.7253 | |

Upcoming Plans

- Wrap up advanced player analysis
- Aim to get higher prediction accuracies
- Finish the first draft of our article