# Project Title:

**Super Bowl Champions by Winning the NFL Sports Bet**

# Dataset:

The list of datasets that will be implemented in the project:

* **NFL Scores and Odds Archives:** <https://www.sportsbookreviewsonline.com/scoresoddsarchives/nfl/nfloddsarchives.htm> [1]
* **NFL Scores and betting data:** <https://www.kaggle.com/tobycrabtree/nfl-scores-and-betting-data?select=nfl_stadiums.csv>
* **GitHub repositories for NFL Statics Scraper**: <https://github.com/ryurko/nflscrapR-data>

# Project idea:

In this project, we want to develop a Machine Learning model that will be used for sports betting by predicting the total points by both teams in an NFL game. We want to explore the different types of Machine Learning applications and see how we can use them to create a sufficiently accurate model to predict the total scores of both NFL teams. In several research articles [1][2] we found, different techniques and models were used to train and validate their data set, but one approach that seems to provide satisfactory results was neural networks [1].

In the same manner, we want to build our Machine Learning model using neural networks to provide the predictions for the sports bets of NFL games. In sports betting, there are three betting aspects. One can either places bets on the Money-Line, Over/Under, and Point Spread. This project will primarily focus on the Over/Under aspect of sports betting. Ideally, we want to predict whether the total points by both teams will be over or under what was statically given by the sportsbook.

# Brief Description of Steps

In order to develop this model, we will need to explore the datasets we found and whether this will be useful in training our model. Once that portion is complete, we can begin creating the models we want to use to train and validate the data set. We will then use the RMSE or MSE values from our models to measure the performance.

# References

1. A. Bucquet and V. Sarukkai, “The Bank is Open: AI in Sports Gambling.” [Online]. Available: http://cs229.stanford.edu/proj2018/report/3.pdf.
2. “Overview of Problem,” *Predictive Applications of Ensemble Methods: NBA Betting*. [Online]. Available: https://www.cs.dartmouth.edu/~lorenzo/teaching/cs174/Archive/Winter2013/Projects/FinalReportWriteup/michelle.w.shu/. [Accessed: 13-Mar-2021].