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Project Proposal

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Benefits of Onside Kicks

My project proposal is to analyze the benefits of an American Football team attempting an onside kick on every kick off.

**Problem Motivation**

In American football, a team kicks off the ball from the 35 yard line to the opposing team, giving them possession. However, the kicking team has the option to perform an onside kick. The onside kick may be recovered by the kicking team so that they retain possession. Performing an onside kick is often seen as an act of desperation since there is a high chance of failure, but recovering the onside kick leads to advantageous field position.

My project is important because if a team were able to recover more onside kicks, their drives would start from at least the 45 yard line and more importantly keep the ball away from the opposing team. Further, fewer kicks will be returned, therefore the chance of injury from high speed collisions will also likely be reduced.

Current literature on the efficiency of onside kicks is scarce, mostly due to the rarity of onside kicks. However, there is some research pointing to the conclusion that onside kicks should be used more often (<http://archive.advancedfootballanalytics.com/2009/09/onside-kicks.html>).

**Data Collection and Analysis**

Since onside kicks are not very common, I will have to gather data from many seasons. This presents a challenge because kicking rules have been changed quite a bit. For example, the kickoff was moved up 5 yards in 2011. In 2016, the touchback line was moved to the 25 yard line from the 20 to encourage more touchbacks. Since teams are more likely than ever to take the touchback, it makes a traditional kickoff more appealing for the kicking team. I will have to keep these rule changes in mind during data collection and analysis.

**In-depth Analysis and Visualizations**

As discussed previously, rule changes will affect data analysis. Another factor to keep in mind is the small sample size of attempted and successful onside kicks.

Data visualizations will be generated and provided.