Prediction of Plays in College and Proffessional Football

Names: Calvin Seamons, Jacob DeGraw, Jeffrey Eardley, Nathan Roberts

Participation Interest: 10/10

Desctription of the project:

In most sports, knowing your opponent's next move is a critical part of the game. This is no less true in the case of football, college or professional. Correctly anticipating the next play, can make all the difference in a critical defensive play. Our goal will be to take data from existing football games, and use it to predict the an upcoming play in a real time environment. This would be similar to what a coach on the field would do.

Features that might be included:

- The current down of the play (1-4)
- Distance to the first down line (yards)
- Distance to the endzone (yards)
- Relative Points (our team score - their team score)
- The time remaining in the half (minutes and/or seconds)
- The time remaining in the game (minutes and/or seconds)
- Did the team just come out of a timeout? (True/False)
- The past few offensive plays (run, pass, punt, field goal, etc.)
- Running confidence (float 0-1)
- Passing confidence (float 0-1)

Data Collection:

Depending on the scope we decide to go with, there are several different options for data collection. The most preferable would be online data. Many sports track many statistics, we might be able to find what we're looking for online (at least in part). Hand labeled data is another option. If the model only has to learn how a single team plays, several games of examples from that team may be sufficient and could be reasonably labeled by hand.

Example Instance:

Features	Values
Current Down	4
Distance to First Down	2
Distance to Endzone	2
Relative Points	-6
Time Left in Half	10 seconds
Time Left in Game	10 seconds
Timeout?	True
Last Three Plays	run, pass, run
Running Confidence	.2
Passing Confidence	.7
Target	pass