**System Project Proposal: Best Plays to Win in NFL**

**First 4Ds of 6D Framework:**

**Decomposition:** The initial phase of creating an AI enabled system for NFL play selection is decomposition. The goal is to reduce workload, speed up decision making process, and achieve new insight from the developed system. For this project we need to break down the decision process into smaller and more manageable components.

This could involve breaking down the game into; offensive, defensive, and special teams plays. Each of these different play types involve different; coaches, players, and different play calls. With our system we would use statistical analysis to understand different patterns and play styles given the circumstances to make the most efficient play call.

**Domain Expertise:** A key component for this system to work is having domain expertise. This will involve consulting with NFL coaches and players to understand their decision making preferences during a game-time situation. The coaches and players will be able to assist with the interpretation and decomposition of the steps needed to make a play call, as well as give insight into what data is will be relevant.

Domain expertise is important because coaches and players can identify critical factors that aren’t displayed in datasets alone. Things like a players ability to perform in clutch situations, considering the weather, or knowledge on the ability of opposing team’s offensive or defensive schemes against certain plays.

**Data:** With the third D in the 6D framework we need to make sure that the data is relevant. This will include; past game outcomes, analyzing team strategies for both teams, and a player’s performance. We will be using datasets on Kaggle, but will look for another source with NFL WAR (wins above replacement) that is a very popular stat in the MLB.

Collect move and store – finding accurate data source

Explore and Transform – preprocess the data accordingly based on relevant data.

Label, Learn, Optimize – We will probably be one-hot encoding a lot of the data.

**Design:**

AI Solution Choice – We will build our own ensemble classifier, but haven’t decided on the specific method.

Hyperparameter and Training and pipeline training – still working on it.