

Final Kaggle Project

KOBE BRYANT
SHOT SELECTION

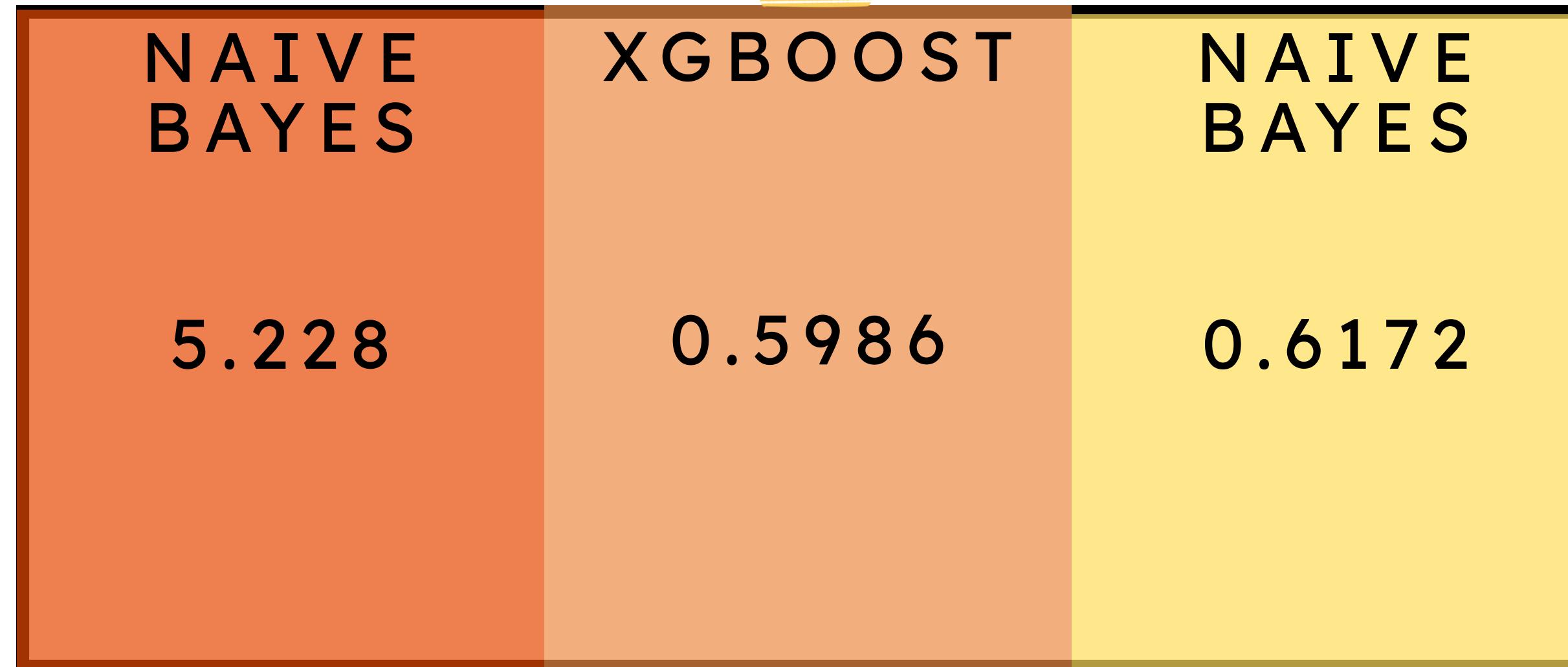


Background

Using Kobe Bryant's 20 year NBA career, we are trying to predict which shots he will make, and which ones he will miss.



MODEL COMPARISON



METRIC: NEGATIVE LOG LOSS

KEY: LOWER = BETTER

FEATURE ENGINEERING



- Removed Features
 - IDs
 - Date
- New Features
 - Distance from Hoop
 - Angle from Hoop
 - Total Seconds Remaining
 - Clutch Time
 - Side of Court
 - Home Game
- Interactions of Features
 - Shot Types
 - Time and Quarter
 - Distance and Angle
 - Clutch Time and Quarter
- Target Encoding
 - Used Dummy Variables
- Missing Data
 - Imputed Median

GRADIENT BOOSTING

XGBOOST

- A tree based-model that builds many decision trees sequentially by using boosting.
- It optimizes a loss function while regularizing to prevent overfitting.
- Works well with nonlinear relationships and interactions between features.