<https://docs.google.com/document/d/1PlgbZN5pGbh33unnFSipy1M3Z0Xdcb2VCdy-4mRVzy0/edit>

SAS Code

ods graphics on;

title 'Binomial Linear Regression on Kobe shots Data';

proc logistic data = KOBEDATA outmodel=model1 plots=all;

class shot\_made\_flag action\_type combined\_shot\_type matchup opponent season shot\_type shot\_zone\_area shot\_zone\_basic shot\_zone\_range / param = ref;

model shot\_made\_flag (event='1') = action\_type combined\_shot\_type matchup opponent season shot\_type shot\_zone\_area shot\_zone\_basic shot\_zone\_range arena\_temp attendance avgnoisedb game\_date lat loc\_x loc\_y lon minutes\_remaining period playoffs seconds\_remaining shot\_distance shot\_id / lackfit ctable;

oddsratio shot\_distance;

run;

title 'Stepwise Regression on Kobe shots Data';

proc logistic data = KOBEDATA outest=betas outmodel=model2 plots = all;

class shot\_made\_flag action\_type combined\_shot\_type matchup opponent season shot\_type shot\_zone\_area shot\_zone\_basic shot\_zone\_range / param = ref;

model shot\_made\_flag(event='1') = action\_type combined\_shot\_type matchup opponent season shot\_type shot\_zone\_area shot\_zone\_basic shot\_zone\_range arena\_temp attendance avgnoisedb game\_date lat loc\_x loc\_y lon minutes\_remaining period playoffs seconds\_remaining shot\_distance shot\_id

/ selection = stepwise details lackfit ctable;

output out=pred p=phat lower=lcl upper=ucl predprob=(individual crossvalidate);

oddsratio shot\_distance;

run;

ods graphics off;

proc print data=betas;

title2 'Parameter Estimates and Covariance Matrix';

run;

proc print data=pred;

title2 'Predicted Probabilities and 95% Confidence Limits';

run;

proc logistic inmodel = model1;

title 'Kobe Shot Predictions Based on Binomial Linear Model\_1';

score data = KOBE\_PREDS out=KobePreds1;

run;

proc print data = KobePreds1;

run;

proc logistic inmodel = model2;

title 'Kobe Shot Predictions Based on Binomial Linear Model\_2';

score data = KOBE\_PREDS out=KobePreds2;

run;

proc print data = KobePreds2;

run;