Scripts for Sloan-MIT Sports Analytics conference

> library(readr)

> AvgNILFull <- read\_csv("Desktop/Conferences/2023SloanMITSports/AvgNILFull.csv")

> library(BMS)

> NILFullData<-as.matrix(AvgNILFull)

> fitFullNIL<-bms(NILFullData,mprior="uniform",g="UIP",nmodel=10)

> image(fitNullNIL)

> NILFrame<-as.data.frame(NILFullData)

> NILFrameData<-NILFrame[,c(1,2,3,4,7,9,10,11)]

> head(NILFrameData)

> NILFit<-lm(AvgNIL~.,data=NILFrameData)

> summary(NILFit)

> boxplot(NILFit[['residuals']],main='Boxplot:Residuals',ylab='residual value')

> NILSlim<-lm(AvgNIL~NILFrameData[,2]+NILFrameData[,5],data=NILFrameData)

> summary(NILSlim)

> boxplot(NILSlim[['residuals']],main='Boxplot:Residuals',ylab='residual value')

> NILSlim<-lm(AvgNIL~NILFrameData[,2]+NILFrameData[,8],data=NILFrameData)

> summary(NILSlim)

> boxplot(NILSlim[['residuals']],main='Boxplot:Residuals',ylab='residual value')

> NILSlim2<-lm(AvgNIL~NILFrameData[,2]+NILFrameData[,6],data=NILFrameData)

> summary(NILSlim2)

> install.packages("RobustGaSP")

> library(RobustGaSP)

> nilout=NILFrame[,1]

> nilin<-NILFrame[,-1]

> nilgasp<-rgasp(design=nilin,response=nilout)

> niluseless<-findInertInputs(nilgasp)

> nilloo<-leave\_one\_out\_rgasp(nilgasp)

> summary(nilloo)

> nilloomean<-nilloo$mean

> nilloosd<-nilloo$sd

> looav<-(nilloomean - nilout)/nilloosd

> looav

> sociallm<-lm(socialdata3[1:61,2]~socialdata3[1:61,3]+socialdata3[1:61,4],data=socialdata3)

> summary(sociallm)

> socialdesign<-socialdata3[1:60,3:4]

> socialresponse<-socialdata3[1:60,2]

> socialgp3<-rgasp(design=socialdesign,response=socialresponse)

> testdesign<-socialdata3[61,3:4]

> socialpred<-predict(socialgp3,testdesign)

> socialpred$mean

> socialgp3

> sociallm<-lm(socialdata3[1:61,2]~socialdata3[1:61,3]+socialdata3[1:61,4],data=socialdata3)

> summary(sociallm)