Reg\_analysis\_R

Sree

November 13, 2018

#device <- list('Laptop', 'Smart\_Phone', 'Desktop\_Computer','Tablet','Smart\_Speaker','Smart\_Watch')  
#cur\_device <- device[1]  
cur\_file = 'encoded\_Affordance\_November19\_alldata\_'  
file\_name <- paste('C:/Users/sree2/Dropbox/SYR\_GAship/afforadance\_Study/Datasets/Encoded\_files/',cur\_file,'Smart\_Phone','\_data.csv',sep="")  
#file\_name  
library(readr)  
cur\_dev\_data <- read\_csv(file\_name)

## Warning: Missing column names filled in: 'X1' [1]

## Parsed with column specification:  
## cols(  
## .default = col\_integer(),  
## ResponseId = col\_character(),  
## device\_use = col\_number(),  
## Q20 = col\_number(),  
## scenario = col\_character(),  
## raw\_scenario = col\_character(),  
## org\_scenaio = col\_character()  
## )

## See spec(...) for full column specifications.

#head(cur\_dev\_data)

library(stringr)  
#Relationship\_3  
#location\_3  
#Q4\_feat3  
headers <- colnames(cur\_dev\_data)  
form\_fin <- ""  
for(var in 1:length(headers))  
{  
 headers[1]  
 if(str\_detect(headers[var],'\_')) {  
 if(str\_detect(headers[var],'sce') == FALSE) {  
 if(str\_detect(headers[var],'device') == FALSE) {  
 if(str\_detect(headers[var],'actual') == FALSE) {  
 if(str\_detect(headers[var],'location\_3') == FALSE) {  
 if(str\_detect(headers[var],'Relationship\_3') == FALSE) {  
 if(str\_detect(headers[var],'Q4\_feat3') == FALSE) {  
 form\_fin <- paste(form\_fin,headers[var],sep="+")  
 }  
 }  
 }  
 }  
 }  
 }  
 }  
}  
  
form\_fin <- substring(form\_fin,2)  
form\_fin <- paste("actual\_use",form\_fin,sep="~")  
#form\_fin

glmout <- glm(form\_fin, data=cur\_dev\_data)  
feats <- summary(glmout)#$coefficients[,4]  
feats

##   
## Call:  
## glm(formula = form\_fin, data = cur\_dev\_data)  
##   
## Deviance Residuals:   
## Min 1Q Median 3Q Max   
## -0.74242 -0.14598 -0.02767 0.10273 0.96934   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.4330227 0.0636528 6.803 1.71e-11 \*\*\*  
## Q1\_feat1 0.0126519 0.0242414 0.522 0.601840   
## Q1\_feat2 0.0695308 0.0306760 2.267 0.023615 \*   
## Q1\_feat3 -0.0362166 0.0281081 -1.288 0.197863   
## Q1\_feat4 -0.0100721 0.0258440 -0.390 0.696818   
## Q1\_feat5 0.0104460 0.0226138 0.462 0.644226   
## Q1\_feat7 0.0400928 0.0489965 0.818 0.413383   
## Q2\_feat1 0.0023089 0.0451644 0.051 0.959237   
## Q2\_feat2 -0.0158764 0.0336336 -0.472 0.636996   
## Q2\_feat3 -0.0722787 0.0447623 -1.615 0.106669   
## Q2\_feat5 -0.0677763 0.0477638 -1.419 0.156196   
## Q3\_feat1 0.0640972 0.0217639 2.945 0.003299 \*\*   
## Q3\_feat2 0.0100215 0.0201328 0.498 0.618750   
## Q3\_feat3 -0.0219123 0.0209765 -1.045 0.296441   
## Q3\_feat4 -0.0421754 0.0318741 -1.323 0.186059   
## Q3\_feat6 -0.0176549 0.0475424 -0.371 0.710451   
## Q4\_feat1 0.0577800 0.0196988 2.933 0.003427 \*\*   
## Q5\_feat1 -0.0630724 0.0400663 -1.574 0.115740   
## Q5\_feat2 -0.1127248 0.0419594 -2.687 0.007333 \*\*   
## Q5\_feat3 0.0267459 0.0386531 0.692 0.489124   
## Q5\_feat4 -0.0434607 0.0496610 -0.875 0.381693   
## Q5\_feat6 -0.0832596 0.0715946 -1.163 0.245119   
## Q6\_feat1 -0.0686369 0.0327971 -2.093 0.036608 \*   
## Q6\_feat2 -0.0024107 0.0253835 -0.095 0.924356   
## Q6\_feat3 0.0202875 0.0328639 0.617 0.537158   
## Q6\_feat4 -0.0362149 0.0438173 -0.826 0.408708   
## Q7\_feat1 0.0229862 0.0261061 0.880 0.378792   
## Q7\_feat2 0.0323878 0.0252346 1.283 0.199609   
## Q7\_feat3 0.0348931 0.0251754 1.386 0.166040   
## Q7\_feat5 -0.0096440 0.0332439 -0.290 0.771797   
## Q8\_feat1 0.0439015 0.0299519 1.466 0.143018   
## Q8\_feat2 -0.0776428 0.0314782 -2.467 0.013800 \*   
## Q8\_feat3 0.0022370 0.0245247 0.091 0.927339   
## Q8\_feat5 -0.0770369 0.0383903 -2.007 0.045038 \*   
## Q9\_feat1 0.0084426 0.0214652 0.393 0.694165   
## Q9\_feat2 0.0073845 0.0218427 0.338 0.735374   
## Q9\_feat3 -0.0969392 0.0268871 -3.605 0.000326 \*\*\*  
## Q9\_feat4 0.0369171 0.0337983 1.092 0.274961   
## Q9\_feat6 0.0608033 0.0383325 1.586 0.112991   
## Q10\_feat1 0.0544314 0.0250728 2.171 0.030158 \*   
## Q10\_feat2 -0.0519786 0.0224813 -2.312 0.020964 \*   
## Q10\_feat3 -0.0174011 0.0268979 -0.647 0.517817   
## Q10\_feat4 0.0403301 0.0268846 1.500 0.133882   
## Q10\_feat6 0.1936411 0.0351073 5.516 4.37e-08 \*\*\*  
## Q10\_feat7 0.1128969 0.0483671 2.334 0.019773 \*   
## Q11\_feat1 -0.0227626 0.0220658 -1.032 0.302505   
## Q11\_feat2 -0.0132758 0.0398266 -0.333 0.738944   
## Q11\_feat3 0.0495008 0.0337047 1.469 0.142221   
## Q11\_feat5 -0.0393137 0.0584911 -0.672 0.501647   
## Q12\_feat1 0.0258441 0.0311155 0.831 0.406394   
## Q12\_feat2 0.0403754 0.0247591 1.631 0.103245   
## Q12\_feat3 0.0033537 0.0254080 0.132 0.895013   
## Q12\_feat5 0.0024173 0.0361121 0.067 0.946642   
## Q13\_feat1 -0.0872808 0.0293574 -2.973 0.003015 \*\*   
## Q13\_feat2 0.0703818 0.0321536 2.189 0.028820 \*   
## Q13\_feat4 -0.0467086 0.0428315 -1.091 0.275733   
## Smart\_Phone\_Q1\_feat1 0.0307185 0.0342676 0.896 0.370228   
## Smart\_Phone\_Q1\_feat2 0.0206904 0.0469470 0.441 0.659507   
## Smart\_Phone\_Q1\_feat3 -0.0531610 0.0469146 -1.133 0.257411   
## Smart\_Phone\_Q1\_feat4 0.0201045 0.0632393 0.318 0.750614   
## Smart\_Phone\_Q1\_feat5 -0.0047166 0.0330783 -0.143 0.886641   
## Smart\_Phone\_Q1\_feat7 0.0693953 0.0842489 0.824 0.410299   
## Smart\_Phone\_Q2\_feat1 0.1051142 0.0744887 1.411 0.158497   
## Smart\_Phone\_Q2\_feat2 -0.0304708 0.0553008 -0.551 0.581750   
## Smart\_Phone\_Q2\_feat3 0.0925257 0.0732973 1.262 0.207107   
## Smart\_Phone\_Q2\_feat5 0.1346920 0.0776293 1.735 0.083020 .   
## Smart\_Phone\_Q3\_feat1 -0.0428515 0.0311119 -1.377 0.168700   
## Smart\_Phone\_Q3\_feat2 -0.0079642 0.0287017 -0.277 0.781464   
## Smart\_Phone\_Q3\_feat3 0.0210382 0.0300828 0.699 0.484492   
## Smart\_Phone\_Q3\_feat4 -0.0033979 0.0590530 -0.058 0.954125   
## Smart\_Phone\_Q3\_feat6 0.0176532 0.0680713 0.259 0.795428   
## Smart\_Phone\_Q4\_feat1 0.0102590 0.0359049 0.286 0.775143   
## Smart\_Phone\_Q5\_feat1 0.1582779 0.0607746 2.604 0.009334 \*\*   
## Smart\_Phone\_Q5\_feat2 0.1032617 0.0590288 1.749 0.080521 .   
## Smart\_Phone\_Q5\_feat3 0.0562937 0.0652991 0.862 0.388834   
## Smart\_Phone\_Q5\_feat4 0.0015773 0.0809626 0.019 0.984460   
## Smart\_Phone\_Q5\_feat6 0.2146180 0.1011857 2.121 0.034151 \*   
## Smart\_Phone\_Q6\_feat1 0.0496336 0.0489329 1.014 0.310663   
## Smart\_Phone\_Q6\_feat2 -0.0378606 0.0399146 -0.949 0.343071   
## Smart\_Phone\_Q6\_feat3 -0.0225368 0.0504031 -0.447 0.654872   
## Smart\_Phone\_Q6\_feat4 0.0400539 0.0640084 0.626 0.531607   
## Smart\_Phone\_Q7\_feat1 0.0404172 0.0378538 1.068 0.285891   
## Smart\_Phone\_Q7\_feat2 -0.0375383 0.0358392 -1.047 0.295150   
## Smart\_Phone\_Q7\_feat3 -0.0288405 0.0353170 -0.817 0.414330   
## Smart\_Phone\_Q7\_feat5 0.0708452 0.0475907 1.489 0.136882   
## Smart\_Phone\_Q8\_feat1 -0.0020198 0.0554999 -0.036 0.970975   
## Smart\_Phone\_Q8\_feat2 0.0561699 0.0523714 1.073 0.283726   
## Smart\_Phone\_Q8\_feat3 -0.0177784 0.0397707 -0.447 0.654951   
## Smart\_Phone\_Q8\_feat5 0.0707552 0.0606548 1.167 0.243666   
## Smart\_Phone\_Q9\_feat1 -0.0140005 0.0336576 -0.416 0.677516   
## Smart\_Phone\_Q9\_feat2 -0.0316522 0.0353887 -0.894 0.371304   
## Smart\_Phone\_Q9\_feat3 0.0764740 0.0415193 1.842 0.065771 .   
## Smart\_Phone\_Q9\_feat4 -0.0409640 0.0563274 -0.727 0.467235   
## Smart\_Phone\_Q9\_feat6 -0.0610653 0.0570229 -1.071 0.284462   
## Smart\_Phone\_Q10\_feat1 -0.0396387 0.0348566 -1.137 0.255714   
## Smart\_Phone\_Q10\_feat2 0.0378416 0.0321732 1.176 0.239786   
## Smart\_Phone\_Q10\_feat3 0.0648581 0.0445997 1.454 0.146180   
## Smart\_Phone\_Q10\_feat4 -0.0802953 0.0421584 -1.905 0.057102 .   
## Smart\_Phone\_Q10\_feat6 -0.1264279 0.0737167 -1.715 0.086629 .   
## Smart\_Phone\_Q10\_feat7 -0.0877483 0.0734299 -1.195 0.232357   
## Smart\_Phone\_Q11\_feat1 0.0166274 0.0342711 0.485 0.627655   
## Smart\_Phone\_Q11\_feat2 0.0721513 0.0512895 1.407 0.159796   
## Smart\_Phone\_Q11\_feat3 -0.0509089 0.0635343 -0.801 0.423148   
## Smart\_Phone\_Q11\_feat5 0.0557399 0.0700091 0.796 0.426106   
## Smart\_Phone\_Q12\_feat1 -0.0164023 0.0478405 -0.343 0.731776   
## Smart\_Phone\_Q12\_feat2 -0.0244077 0.0376642 -0.648 0.517103   
## Smart\_Phone\_Q12\_feat3 -0.0002561 0.0390578 -0.007 0.994770   
## Smart\_Phone\_Q12\_feat5 0.0357362 0.0551713 0.648 0.517299   
## Smart\_Phone\_Q13\_feat1 0.1784904 0.0436115 4.093 4.59e-05 \*\*\*  
## Smart\_Phone\_Q13\_feat2 0.0750302 0.0457774 1.639 0.101506   
## Smart\_Phone\_Q13\_feat4 0.1738381 0.0590452 2.944 0.003309 \*\*   
## location\_1 -0.0830526 0.0212178 -3.914 9.65e-05 \*\*\*  
## location\_2 -0.0187257 0.0207400 -0.903 0.366794   
## Relationship\_1 -0.0138138 0.0200729 -0.688 0.491488   
## Relationship\_2 0.0131736 0.0212156 0.621 0.534774   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## (Dispersion parameter for gaussian family taken to be 0.07327775)  
##   
## Null deviance: 265.475 on 1172 degrees of freedom  
## Residual deviance: 77.528 on 1058 degrees of freedom  
## AIC: 374.16  
##   
## Number of Fisher Scoring iterations: 2

#fin\_feats <- feats[feats<=0.05]  
#fin\_feats  
#file\_path = "C:/Users/sree2/Dropbox/SYR\_GAship/afforadance\_Study/ML models/logistic\_Regression\_p\_values/"  
#file\_fin = paste(file\_path,cur\_file,cur\_device,"\_pvalues.csv",sep="")  
#column\_names = c('Features','p\_values')  
#write.csv(fin\_feats,file\_fin,)