

Network Structure

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2023-03-02

In this markdown I will:

1. Create the network structure for the association matrix.

PART 1: *Network Structure*

```
# Read in social association matrix
setwd("C:/Users/bankh/My_Repos/Dolphins/data")
gbi<- read.csv("gbi.csv")
source("../code/functions.R") # SRI & null permutation
nxn<- SRI.func(gbi)
nxn<-as.matrix(nxn)
## load all necessary packages
require(igraph)

## Create social network
ig <- graph_from_adjacency_matrix(as.matrix(nxn),
                                mode = c("undirected"),
                                weighted = TRUE,
                                diag = F, # No loops
                                add.colnames = T,
                                add.rownames = NA)

# Plot network
plot(ig,
     layout = layout_with_fr(ig),
     # link weight, rescaled for better visualization
     edge.width= E(ig)$weight*4,
     # node size as degree (rescaled)
     vertex.size= sqrt(igraph::strength(ig, vids = V(ig), mode = c("all"), loops = TRUE) *10 ),
     vertex.frame.color= NA, #"black",
     vertex.label.family = "Helvetica",
     vertex.label.color="black",
     vertex.label.cex=0.8,
     vertex.label.dist=2,
     # edge.curved=0,
     vertex.frame.width=0.01,
)
```

