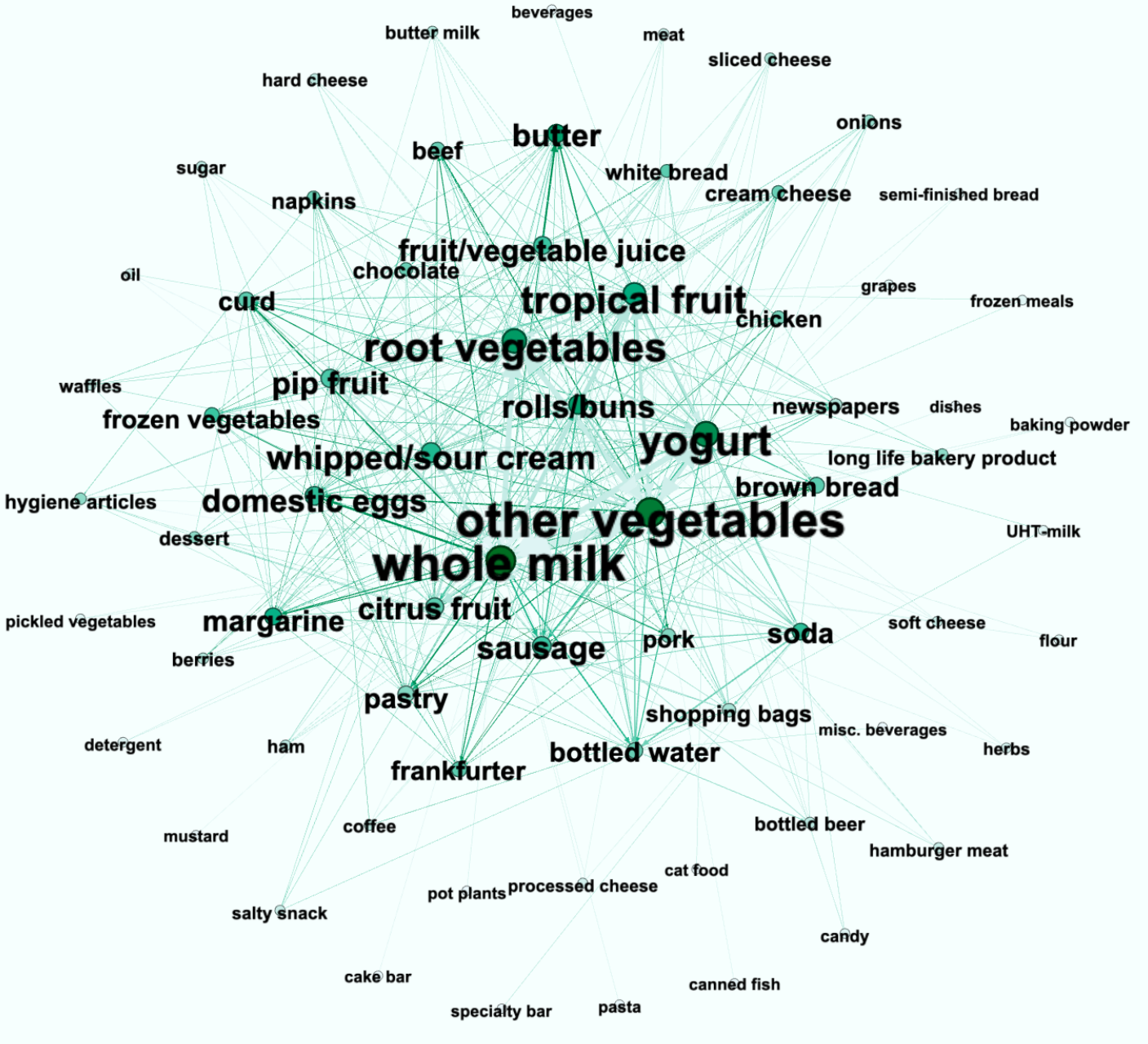
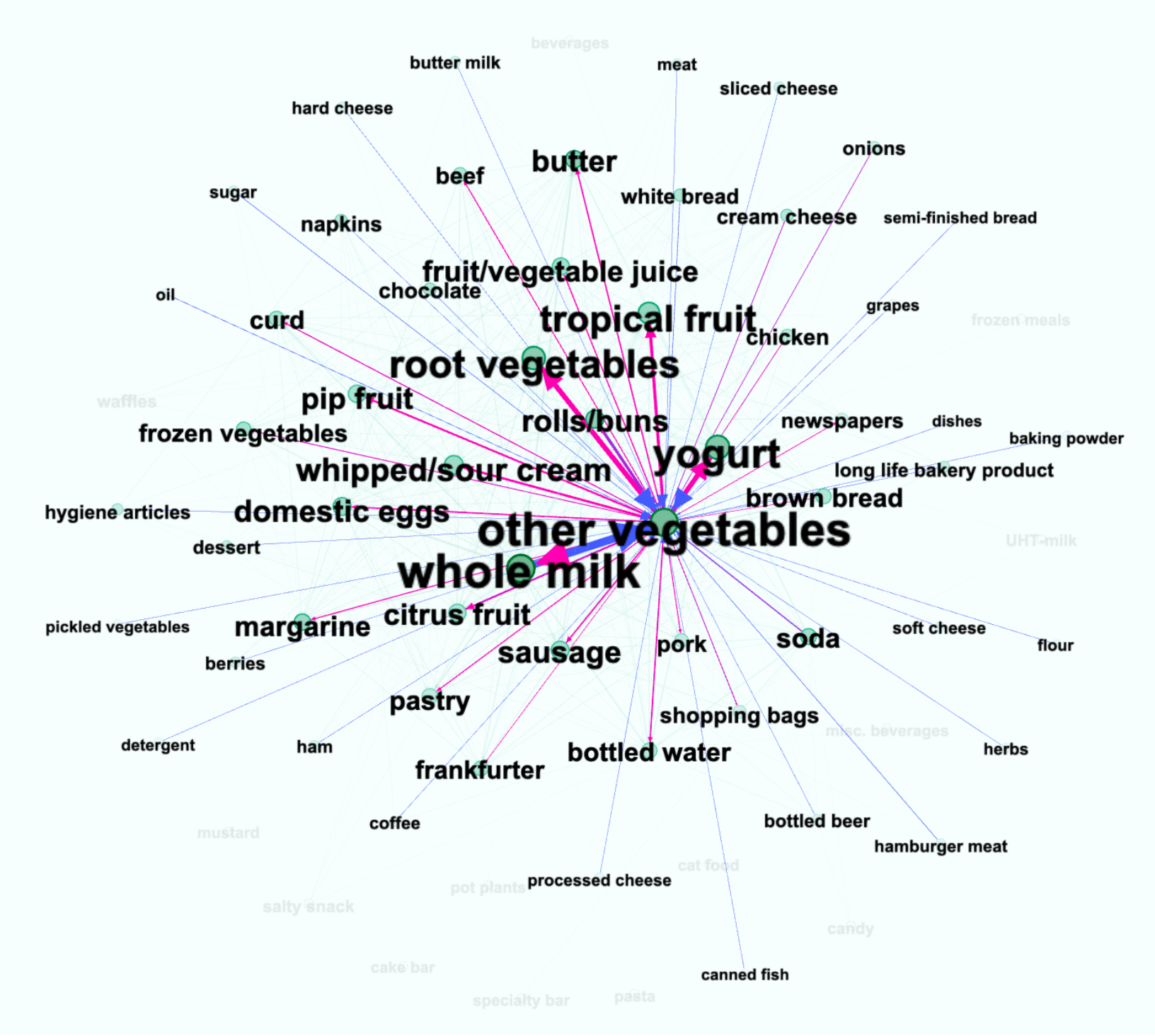
```
#Install packages
install.packages("arules")
install.packages("tidyverse")
install.packages("arulesViz")

#Load libraries
library(arules)
library(tidyverse)
library(arulesViz)

#Read the groceries.txt file
lines <- readLines('/Users/alfredosandoval/Documents/ UT/Summer/Intro to Machine
Learning/Project 2/groceries.txt')

#Create baskets
baskets <- lapply(lines, function(line) strsplit(line, split = ",")[[1]])

View(baskets)

#Remove duplicates
baskets <- lapply(baskets, unique)

transactions <- as(baskets, "transactions")
summary(transactions)

#Generate association rules
groceriesrules <- apriori(transactions,
                          parameter = list(support = 0.005,
                                           confidence = 0.1))
inspect(groceriesrules)

inspect(subset(groceriesrules, subset=lift > 4))
inspect(subset(groceriesrules, subset=lift > 3))

#Plots
plot(groceriesrules)
plot(groceriesrules, measure = c("support", "lift"), shading = "confidence")

#Export to GEPHI for a nice visualization of the rules
groceries_graph = associations2igraph(subset(groceriesrules, lift>1.5),
associationsAsNodes = FALSE)
igraph::write_graph(groceries_graph, file='groceries.graphml', format = "graphml")
```

GEPHI plot


beverages
butter milk
meat
sliced cheese
hard cheese
onions
butter
beef
sugar
white bread
cream cheese
semi-finished bread
napkins
fruit/vegetable juice
chocolate
oil
grapes
curd
tropical fruit
frozen meals
chicken
root vegetables
waffles
pip fruit
rolls/buns
newspapers
dishes
frozen vegetables
baking powder
yogurt
whipped/sour cream
long life bakery product
brown bread
hygiene articles
domestic eggs
other vegetables
dessert
UHT-milk
whole milk
pickled vegetables
margarine
citrus fruit
soft cheese
soda
pork
sausage
flour
berries
pastry
shopping bags
misc. beverages
detergent
ham
bottled water
herbs
frankfurter
mustard
coffee
bottled beer
hamburger meat
cat food
pot plants
processed cheese
salty snack
candy
cake bar
canned fish
specialty bar
pasta

Pink lines indicate “Out” direction
Blue lines indicate “In” direction



If you buy hamburger meat, you are more likely to also buy root vegetables, other vegetables, whole milk and sausage.