January 9, 2025

image processing   .

Figure 1: processed image

R:

```r
install.packages("magick")
library(magick)

#
image_path <- "C:/Users/Sahami
    Family/Documents/azmayeshgah/amir.jpg"
image <- image_read(image_path)

#
image <- image_scale(image, "x350")
image <- image_modulate(image, brightness = 100, saturation
    = 180, hue = 100)
```

```
11
12 #
13 image <- image_annotate(image, "amirali", size = 30, color
      = "red",
14                          boxcolor = "yellow", font =
                              "Forte", strokecolor = "black",
15                          location = "+154+315")
16
17 #
18 image_write(image, "C:/Users/Sahami
      Family/Documents/azmayeshgah/processed_image.jpg")
```
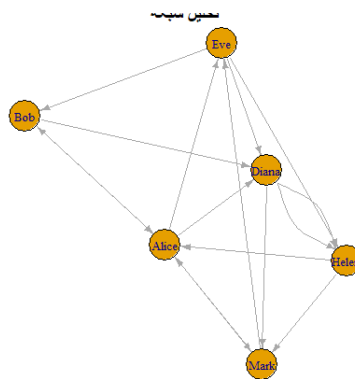
1 Network analysis

.   .

Figure 2: Network analysis

R:

```
1 library(igraph)
2
3 #
4 data <- data.frame(
5   from = c("Alice", "Bob", "Alice", "Diana", "Diana",
        "Helen", "Mark", "Alice", "Eve", "Mark", "Helen",
        "Diana", "Eve", "Alice", "Bob", "Eve"),
6   to = c("Bob", "Diana", "Eve", "Helen", "Mark", "Alice",
        "Alice", "Diana", "Bob", "Eve", "Mark", "Helen",
        "Diana", "Mark", "Alice", "Helen"),
7   weight = c(1, 2, 3, 4, 5, 6, 2, 3, 1, 2, 4, 5, 6, 2, 3, 1)
8 )
9
10 #
```

```r
graph <- graph_from_data_frame(data, directed = TRUE)

#
cat("                        :\n")
print(degree(graph, mode = "in"))
cat("                              :\n")
print(betweenness(graph, directed = TRUE))

#
clusters <- cluster_walktrap(graph)
plot(
  graph,
  vertex.color = membership(clusters),
  vertex.size = 20,
  vertex.label.cex = 0.8,
  edge.arrow.size = 0.5,
  main = "                    "
)
```

2 world cloud

.

Figure 3: world cloud

:

```r
install.packages("wordcloud2")
library(wordcloud2)

```

```r
#
word_freq <- data.frame(
  word = c("data", "science", "machine", "learning",
      "network", "cloud", "analysis"),
  freq = c(80, 60, 50, 40, 30, 20, 10)
)

#
wordcloud2(word_freq, color = "random-light",
    backgroundColor = "white")

#
library(htmlwidgets)
saveWidget(wordcloud2(word_freq, color = "random-light"),
    "C:/Users/Sahami
    Family/Documents/azmayeshgah/wordcloud_star.html")
```