

# Interactive Shiny report of HTSanalyzeR2

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**Package**

HTSanalyzeR2 0.99.11

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# 1 Introduction

In this short tutorial, we give a detailed illustration for the shiny report part of **HTSanalyzeR2** to visualize the results and modify figures in different aspects.

## 2 Interactive Shiny report visualization

### 2.1 Visualize single GSCA object for individual data set

For single data set analysis, after analyzed by HTSanalyzeR2, we can get a GSCA object and use the function *report* to launch the shiny report.

```
data(d7_gsca)
report(d7_gsca)
```

#### 2.1.1 The hypergeometric test result table[Figure1]

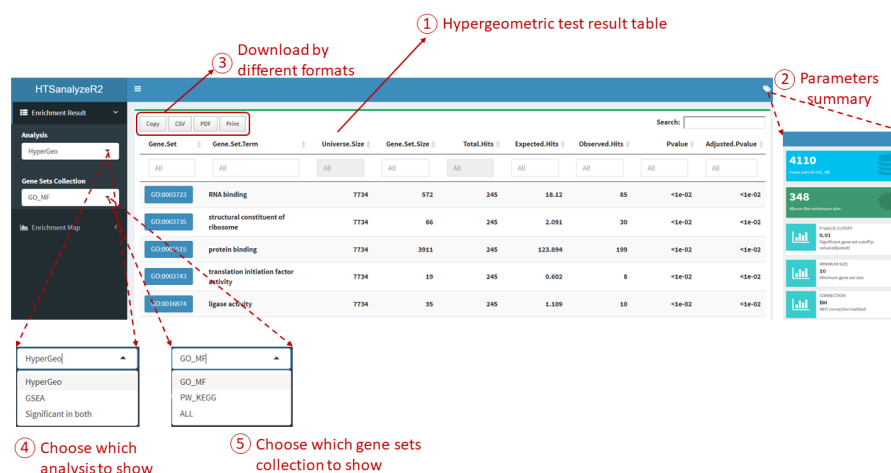


Figure 1: The hypergeometric test result table

#### 2.1.2 Parameters for modifying the figure[Figure2]

There are five main parts for users to modify their figure by interactive operations including: **Layout**, **Label**, **Node**, **Edge** and **Color Scheme**. Following is a detailed explanation for each part.

- Layout:** A widget to control the whole pattern
  - Mode: There are two layout modes inside this Shiny report, users can choose any of them to get better visualization based on their data.
  - Parameters: Two more parameters *Edge Repel* and *Adjust Sizes* could be used to make the figure looser.

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- Gravity: Ranging from -50 to 50, users can adjust it step by step. The larger it is, the more even the pattern would be.
- **Label**: A widget to modify the label of nodes with three easy-to-understand parameters: *Text*, *Label Scale* and *Label color*.
- **Node**: A widget to modify the nodes with four easy-to-understand parameters: *Scale*, *Opacity*, *Border Width* and *Border Color*.
- **Edge**: A widget to modify the edges with two easy-to-understand parameters: *Edge Scale* and *Edge Color*.
- **Color Scheme**: A widget to change the default color.

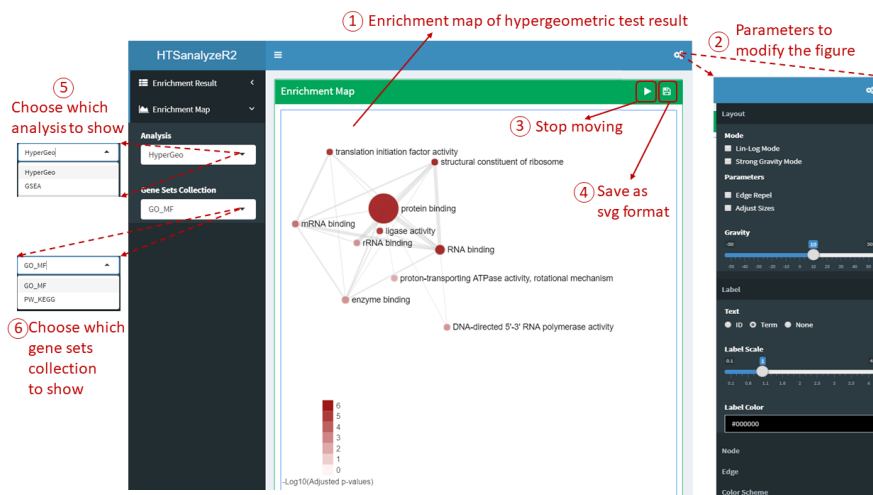


Figure 2: The enrichment map of hypergeometric test result

## 2.2 Visualize single *NWA* object for individual data set

```
data(d7_nwa)
report(d7_nwa)
```

### 2.2.1 The identified subnetwork[Figure3]

## 2.3 Visualize a list of *GSCA* objects for time series/comparative analysis

```
data(gscats)
## To make the figure more compact, we set a cutoff
## to move any other edges with low Jaccard coefficient.
reportAll(gscats, cutoff = 0.035)
```

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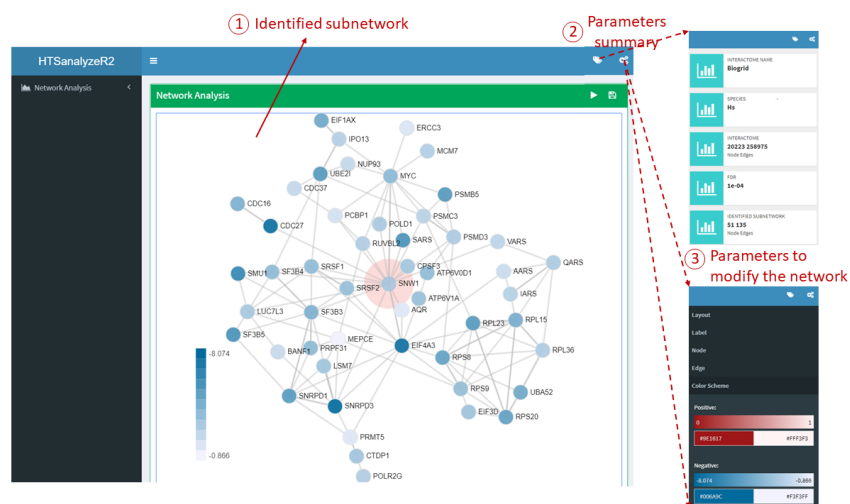


Figure 3: The identified subnetwork

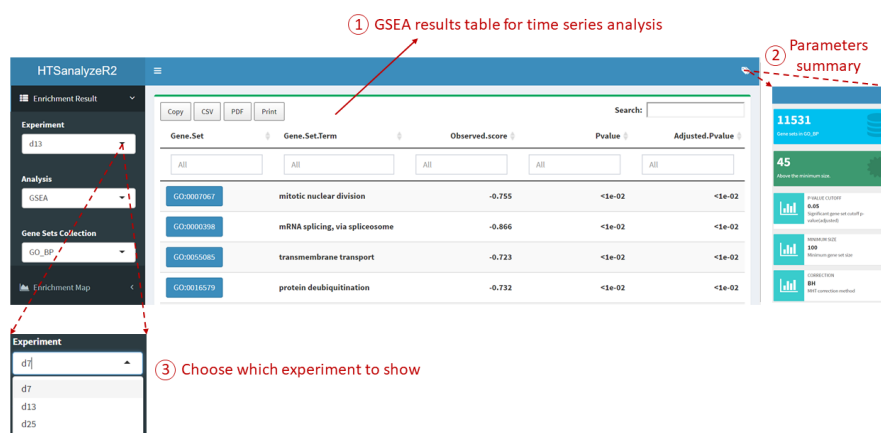


Figure 4: GSEA results table for time series/comparative analysis

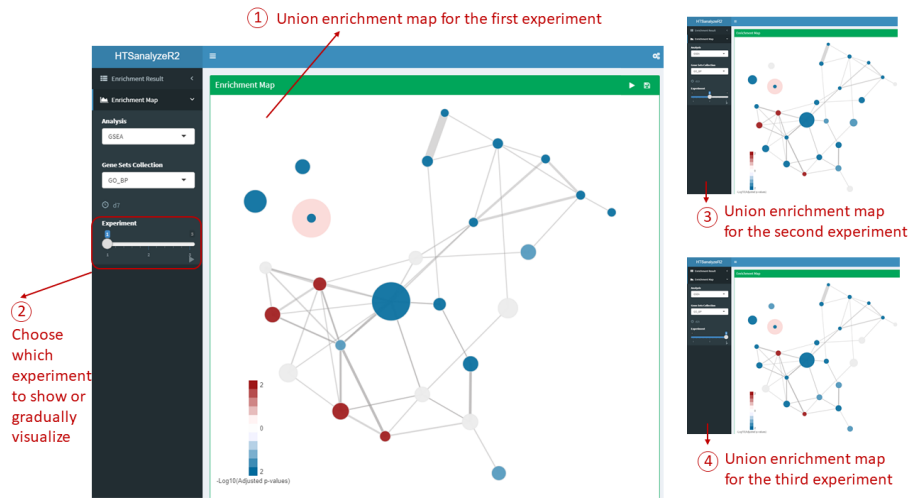
2.3.1 GSEA results table for time series/comparative analysis[Figure4]

2.3.2 Union enrichment map for time series/comparative analysis[Figure5]

2.4 Visualize a list of NWA objects for time series/comparative analysis

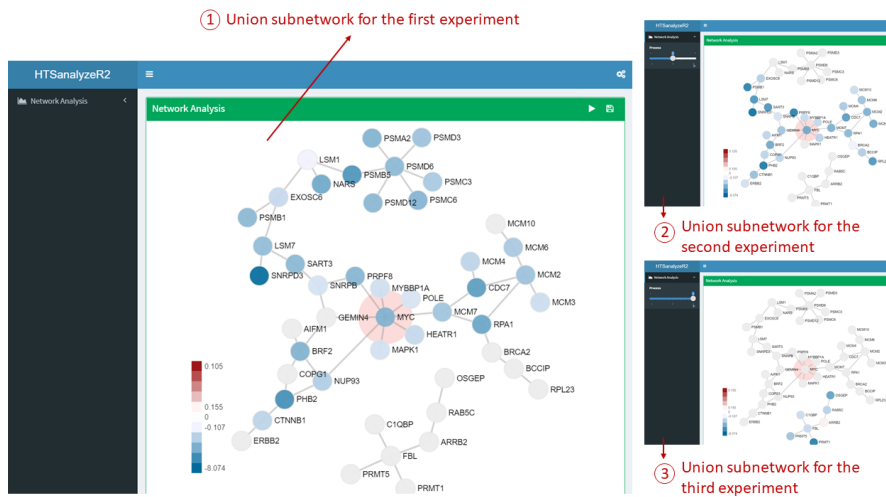
```
data(nwaTS)
reportAll(nwaTS)
```

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**Figure 5: Union enrichment map for time series/comparative analysis**

### 2.4.1 Union subnetwork for time series/comparative analysis[Figure6]



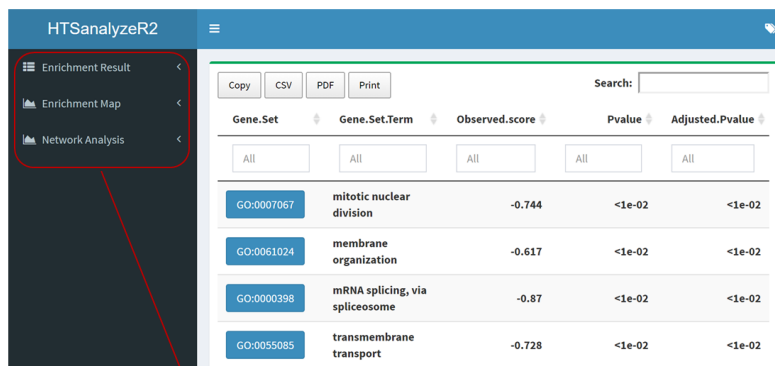
**Figure 6: Union subnetwork for time series/comparative analysis**

## 2.5 Visualize both *GSCA* and *NWA* objects simultaneously

```
reportAll(g sca = gscaTS, nwa = nwaTS)
```

### 2.5.1 Visualize both GSEA and network result in the same report[Figure7]

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① Show both GSEA result and network result in the same report

Figure 7: Visualize both GSEA and network result in the same report

## 3 Session Info

```
## R version 3.4.2 (2017-09-28)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Debian GNU/Linux 9 (stretch)
##
## Matrix products: default
## BLAS/LAPACK: /usr/lib/libopenblas-r0.2.19.so
##
## locale:
##  [1] LC_CTYPE=en_US.UTF-8      LC_NUMERIC=C
##  [3] LC_TIME=en_US.UTF-8      LC_COLLATE=en_US.UTF-8
##  [5] LC_MONETARY=en_US.UTF-8  LC_MESSAGES=C
##  [7] LC_PAPER=en_US.UTF-8     LC_NAME=C
##  [9] LC_ADDRESS=C             LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_US.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] stats      graphics grDevices utils      datasets  methods   base
##
## other attached packages:
## [1] BiocStyle_2.6.0
##
## loaded via a namespace (and not attached):
## [1] compiler_3.4.2  backports_1.1.1 bookdown_0.5    magrittr_1.5
## [5] rprojroot_1.2   tools_3.4.2     htmltools_0.3.6 yaml_2.1.16
## [9] Rcpp_0.12.16    stringi_1.1.7   rmarkdown_1.8   knitr_1.17
## [13] stringr_1.3.0   digest_0.6.15   evaluate_0.10.1
```