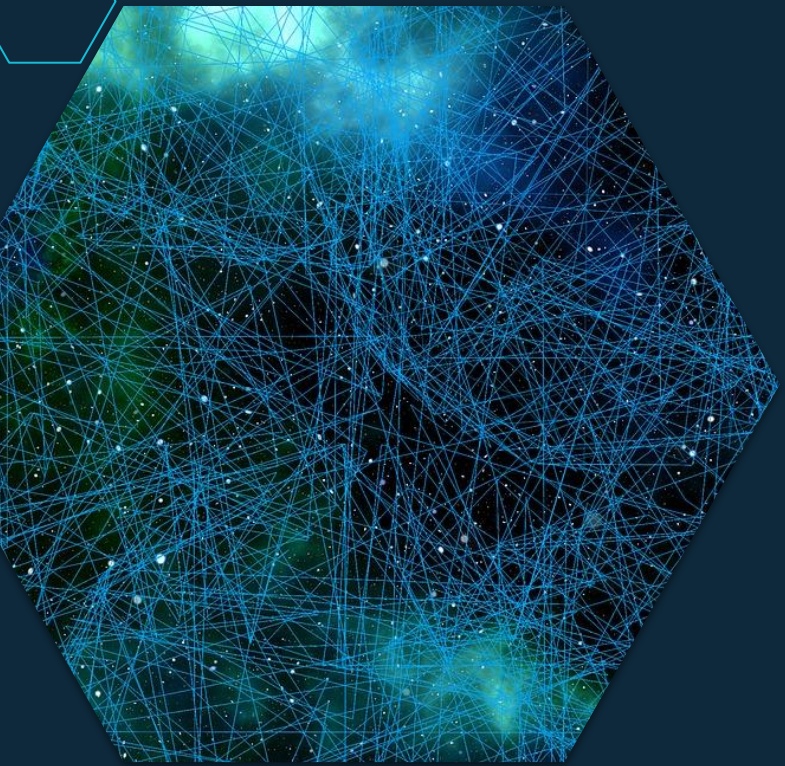


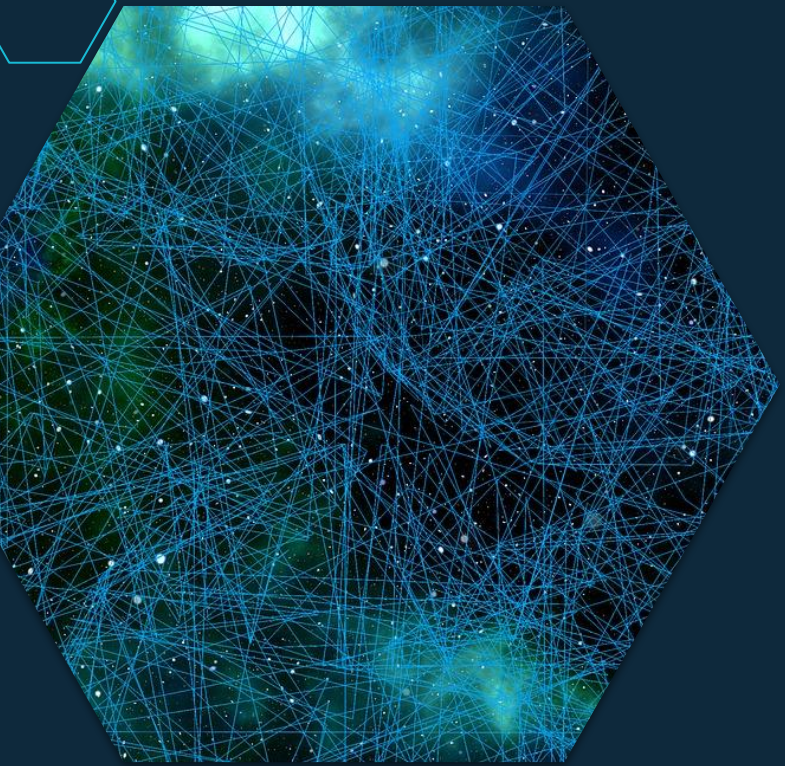
BNViewer

Interactive Visualization of Bayesian Networks

Robson Fernandes <robs.fernandes@outlook.com>

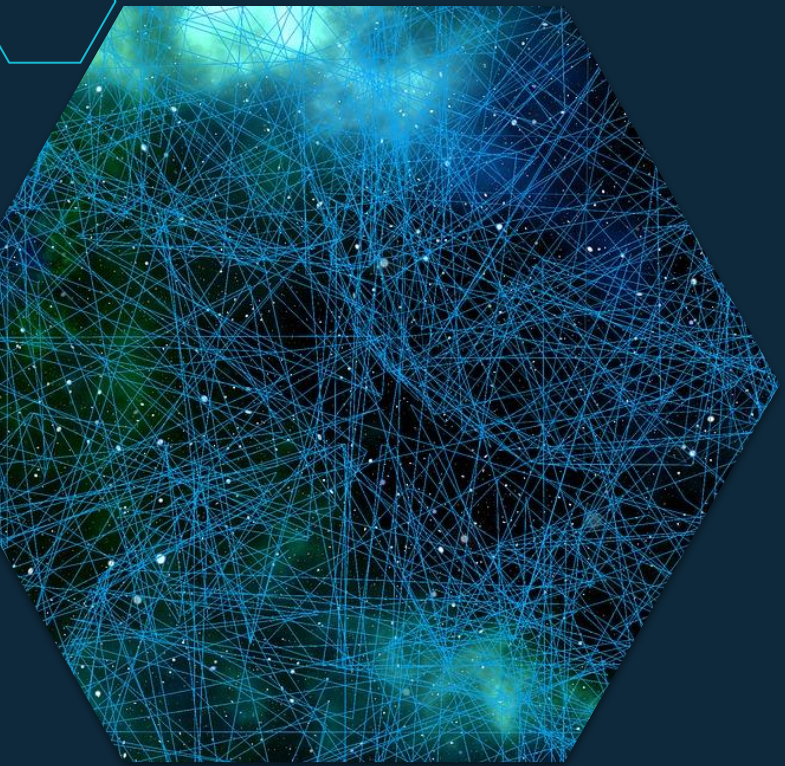
Brett Drury <brett.drury@gmail.com>

Alneu de Andrade Lopes <alneu@icmc.usp.br>



BNViewer

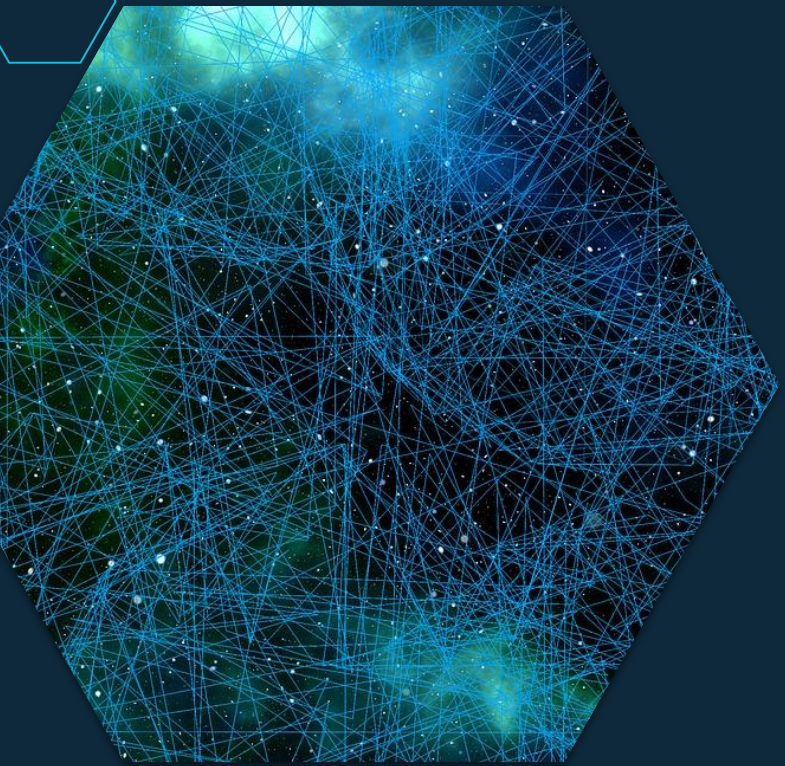
is an R package for interactive visualization of Bayesian Networks based on bnlearn, through visNetwork. The bnviewer package reads various structure learning algorithms provided by the bnlearn package.



Installation - CRAN

You can install the stable version of bnviewer from CRAN:

```
install.packages("bnviewer")
```



Installation – GitHub

bnviewer is available for developers, install from GitHub.

```
install.packages("devtools")
devtools::install_github("robson-fernandes/bnviewer")
```

How to use

Import the bnlearn and bnviewer packages.

```
library(bnlearn)
library(bnviewer)
```

Import the desired dataset and apply a structure learning algorithm. Example (Hill-Climbing (HC)).

```
data("alarm")
bn.learn.hc = hc(alarm)
```

How to use : Layout in Grid

Call the viewer function of the bnviewer package with the desired parameters.

```
viewer(bn.learn.hc,
    bayesianNetwork.width = "100%",
    bayesianNetwork.height = "80vh",
    bayesianNetwork.layout = "layout_on_grid",
    bayesianNetwork.title = "Discrete Bayesian Network - Alarm",
    bayesianNetwork.subtitle = "Monitoring of emergency care patients",
    bayesianNetwork.footer = "Fig. 1 - Layout on grid",
    node.colors = list(background = "#f4bafd", border = "#2b7ce9",
                       highlight = list(background = "#97c2fc",
                       border = "#2b7ce9"))
)
```

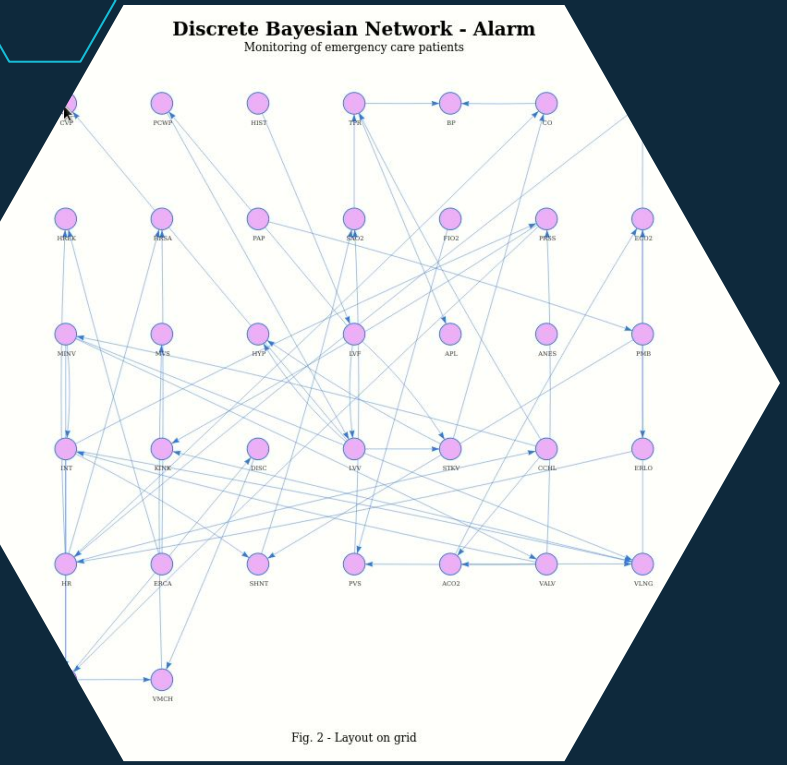


Fig. 2 - Layout on grid

Output

Discrete Bayesian Network - Alarm.
Monitoring of emergency care patients.
Layout on Grid

How to use : Layout in Circle

Call the viewer function of the bnviewer package with the desired parameters.

```
viewer(bn.learn.hc,
    bayesianNetwork.width = "100%",
    bayesianNetwork.height = "80vh",
    bayesianNetwork.layout = "layout_in_circle",
    bayesianNetwork.title = "Discrete Bayesian Network - Alarm",
    bayesianNetwork.subtitle = "Monitoring of emergency care patients",
    bayesianNetwork.footer = "Fig. 1 - Layout in circle",
    node.colors = list(background = "red", border = "black",
                       highlight = list(background = "black",
                       border = "red"))
)
```

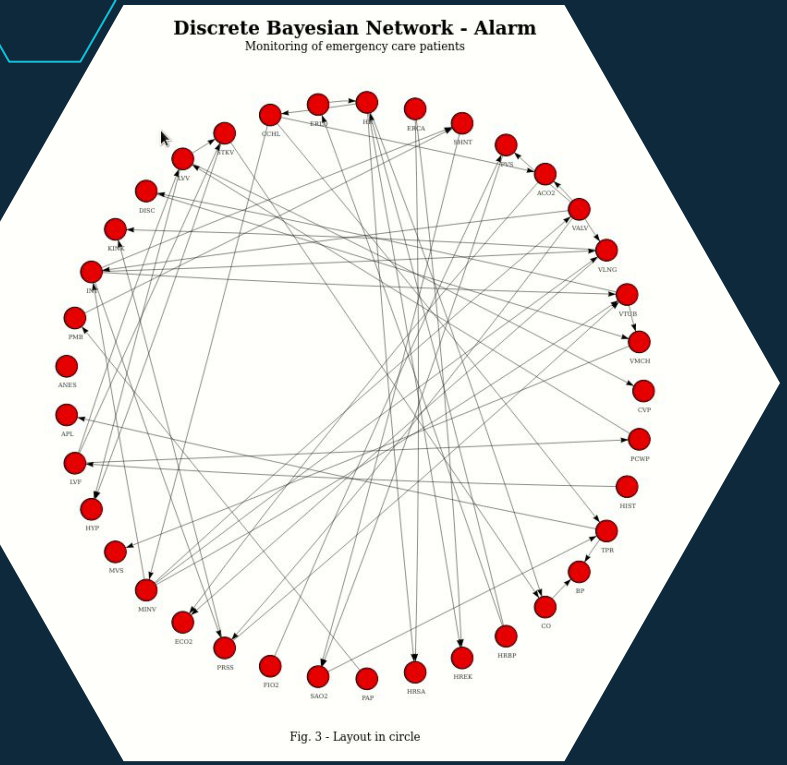


Fig. 3 - Layout in circle

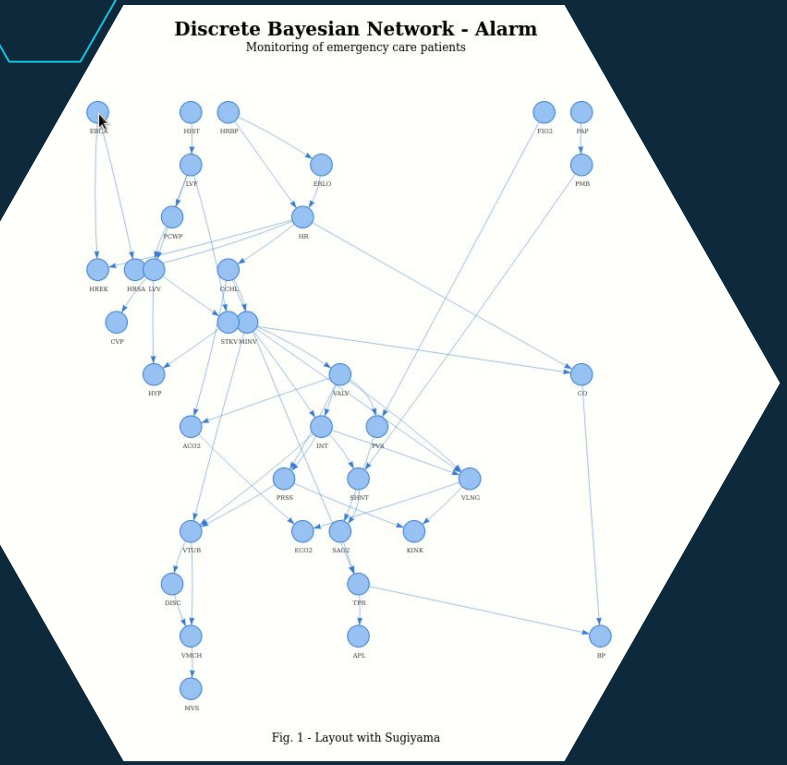
Output

Discrete Bayesian Network - Alarm.
Monitoring of emergency care patients.
Layout in Circle

How to use : Layout with Sugiyama

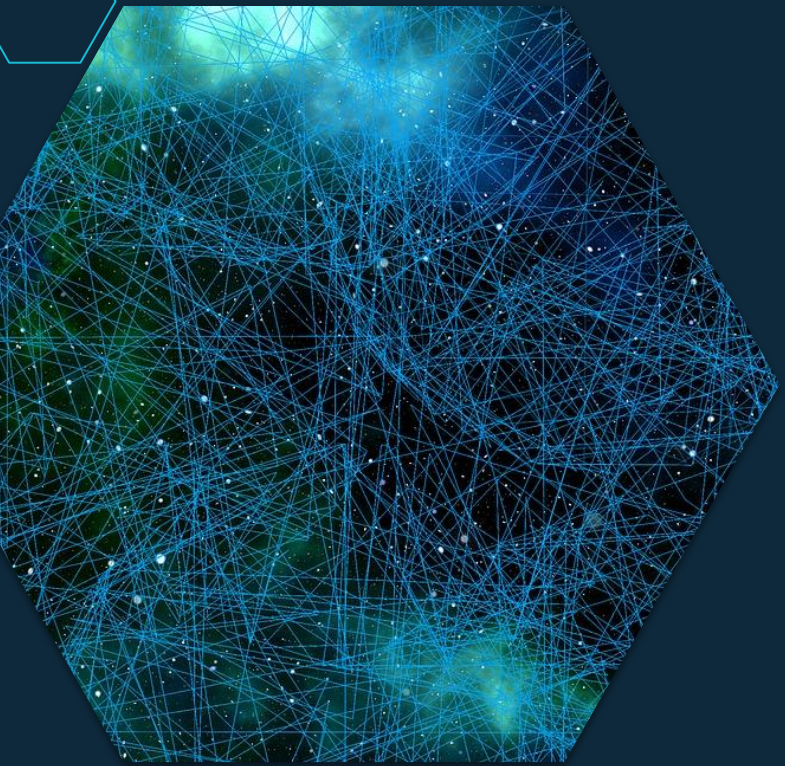
Call the viewer function of the bnviewer package with the desired parameters.

```
viewer(bn.learn.hc,
    bayesianNetwork.width = "100%",
    bayesianNetwork.height = "80vh",
    bayesianNetwork.layout = "layout_with_sugiyama",
    bayesianNetwork.title = "Discrete Bayesian Network - Alarm",
    bayesianNetwork.subtitle = "Monitoring of emergency care patients",
    bayesianNetwork.footer = "Fig. 1 - Layout with Sugiyama"
)
```



Output

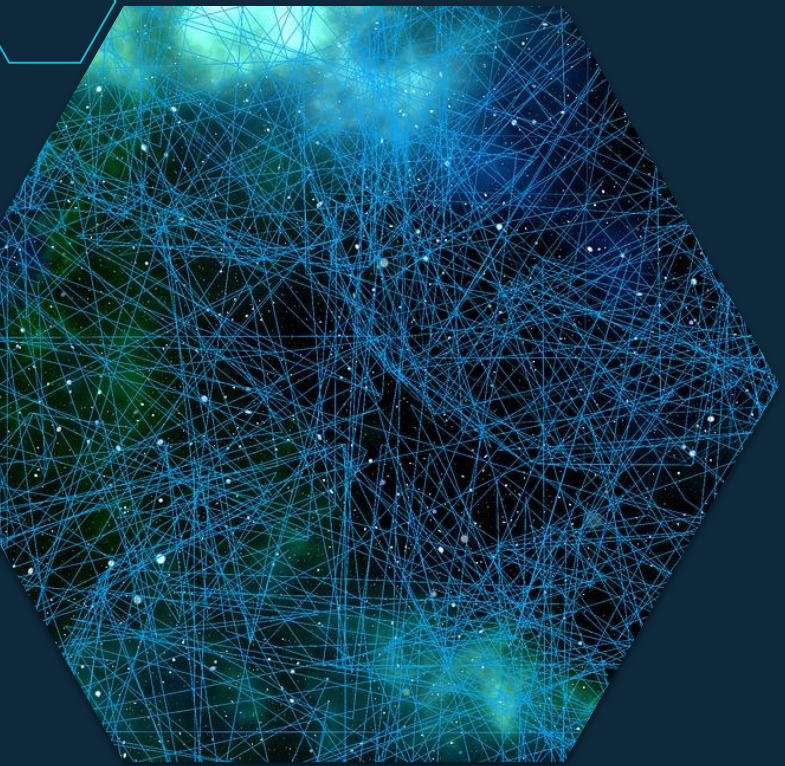
Discrete Bayesian Network - Alarm.
Monitoring of emergency care patients.
Layout with Sugiyama



More Documentation

For more documentation, go to the link:

http://robsonfernandes.net/bnviewer



Thanks