`MIIC online` Tutorial

This Tutorial illustrates how to use `MIIC online` server on two example datasets, the `Directed Alarm` and `Undirected Alarm` datasets, available from `MIIC Workbench` page.

The User is referred to the online **User Guide** for a complete description of `MIIC online` features.

A `Directed Alarm` dataset: a straightforward example

Input Dataset:

- From `MIIC Workbench`, enter a **Job name** in the **Basic Settings** section

- Choose `Directed Alarm` as **Dataset** to analyze

- Check **Variable names** in "**Columns**"(default) corresponding to the data arrangement of the downloadable `Directed Alarm` dataset

- **Optionally**, you can enter additional information in the **Advanced Settings** section:

    - In **Algorithm advanced parameters**: See **User Guide** for complete description.
    - In **Supplementary files**: The User may want to use the **network layout** and **Category order** for `Directed Alarm` dataset
    - In **Confidence cut**: The User may want to use **Confidence filtering** of predicted edges ("**Off**" (default) → "**On**") with a **Number of shufflings** (**100**, default) and a **Confidence threshold** (**0.01**, default), which corresponds to a likelihood ratio to predict each edge by chance given the available data.

→ That's it! Press the "**Submit**" button at the bottom of the page to run `MIIC online`.

Output Results:

- The User is directly forwarded to the **Advanced visualization** tab where the reconstructed network, displayed with the uploaded network layout (optional), can be rearranged manually.

- The User can also customize further the network display by pressing the "**GO**" button to open `MIIC Cytoscape` online display with full functionalities.

- The User can check on the **Correlation plot** tab that no significant sampling bias was uncovered between successive samples in this dataset (*i.e.* the autocorrelation between successive samples readily drops around 10^{-3}).

- The user is invited to scroll **other output files and statistics** using the available tabs and is referred to the online **User Guide** for more details

B Undirected Alarm dataset: a more advanced example

Input Dataset:

- From `MIIC Workbench`, enter a **Job name** in the **Basic Settings** section

- Choose `Undirected Alarm` as **Dataset** to analyze

- Check **Variable names** in "**Columns**"(default) corresponding to the data arrangement of the downloadable `Undirected Alarm` dataset

- **Optionally**, you can enter additional information in the **Advanced Settings** section:

    - In **Algorithm advanced parameters**: See **User Guide** for complete description.
    - In **Supplementary files**: The User may want to use the **network layout** for `Undirected Alarm` dataset (no **Category order** is needed for numerical categories)
    - In **Confidence cut**: The User may want to use **Confidence filtering** of predicted edges ("**Off**" (default) → "**On**") with a **Number of shufflings** (**100**, default) and a **Confidence threshold** (**0.01**, default), which corresponds to a likelihood ratio to predict each edge by chance given the available data.

$\longrightarrow$ Press the "**Submit**" button at the bottom of the page to run `MIIC online`.

Initial Output Results:

- If a **Confidence cut** was required by the User in the optional input parameters, the run will take a couple of minutes and `MIIC online` will suggest the User to leave an email (optional) to be notified once the job is done.

- On the top of the result page, the User receives a **Warning** about a *sampling bias between successive samples* in the dataset, as shown on the autocorrelation plot in the **Cross correlation** tab (*i.e.* exponential decay). This suggests to use an effective number of sample, **Neff**, in the advanced parameter section. The corresponding results are provided to the User through a link ("here"). These are the final results.

Final Output Results:

- The User is directly forwarded to the **Advanced visualization** tab where the reconstructed network, displayed with the uploaded network layout (optional), can be rearranged manually.

- The User can also customize further the network display by pressing the "**GO**" button to open `MIIC Cytoscape` online display with full functionalities.

- The User is invited to scroll **other output files and statistics** using the available tabs and is referred to the online **User Guide** for more details.