

MUST-C

Morris water maze Unbiased StraTegy - Classification

Free tools for spatial strategy classification

MUST-C is an automated method for machine-learning classification of Morris water maze searching strategies, compatible for AnyMaze and EthoVision users.





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Unraveling cognitive traits using the Morris water maze unbiased strategy classification (MUST-C) algorithm

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[Unraveling cognitive traits using the Morris water maze unbiased strategy classification \(MUST-C\) algorithm. Tomer Illouz, Ravit Madar, Yoram Louzou, Kathleen J Griffioen and Eitan Okun. Brain Behav Immun. 2016 Feb;52:132-144. doi: 10.1016/j.bbi.2015.10](#)

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MUST-C Manual

Morris water maze Unbiased Strategy Classification

A. Extract data from your tracking software:

1. AnyMaze (*.slk files).
2. EthoVision (*.xls / *.xlsx files).

B. Order your files by day, strain, treatment etc. In different folders.

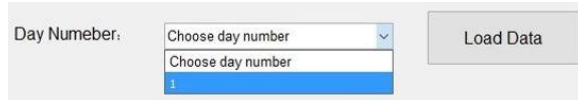
C. Insert the details of your project:

1. Project's name: in letters only (myProject).
2. Pool's diameters: in centimeters (150).
3. Select your tracking software:
AnyMaze or EthoVision.



A screenshot of a web-based configuration form. It has three rows: 'Project Name' with a text input field containing 'myProject'; 'Pool Diameter' with a text input field containing '150' and a 'cm' label to its right; and 'Tracking software' with a dropdown menu showing 'AnyMaze'.

D. To add data to the panel, add a new day by choosing a day number. You can always add new trials to existing days. Click Load Data

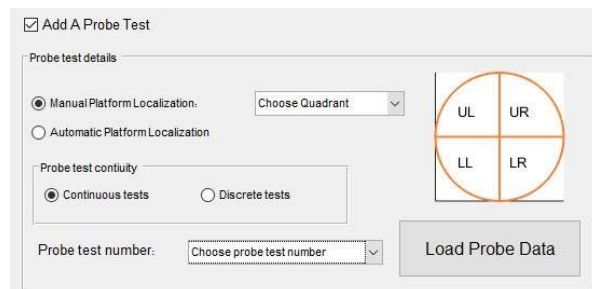


A screenshot of a 'Load Data' form. It features a 'Day Number' label followed by a dropdown menu with 'Choose day number' selected. Below the dropdown is a list of numbers from 1 to 6, with the number 4 highlighted in blue. To the right of the dropdown is a 'Load Data' button.

E. Browse and select your files for chosen day, .slk files for AnyMaze and .xlsx for EthoVision.

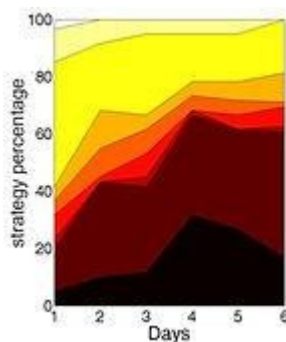
F. You can add a Probe test to your analysis, even without adding any acquisition phase data at the previous stage:

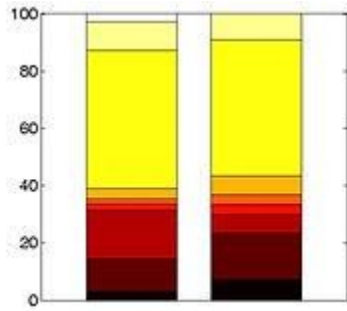
1. click Add a probe test.
2. choose manual or automatic platform localization.



A screenshot of the 'Add A Probe Test' form. It has a checked checkbox 'Add A Probe Test'. Below it is the 'Probe test details' section. Under 'Manual Platform Localization', there is a radio button selected and a 'Choose Quadrant' dropdown menu. Under 'Automatic Platform Localization', there is an unselected radio button. To the right is a circular diagram divided into four quadrants labeled UL, UR, LL, and LR. Under 'Probe test continuity', there are two radio buttons: 'Continuous tests' (selected) and 'Discrete tests'. At the bottom, there is a 'Probe test number' dropdown menu and a 'Load Probe Data' button.

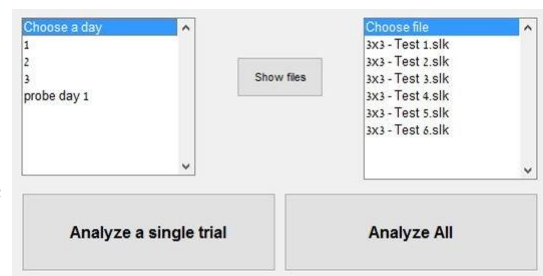
3. Choose a continuous or discrete analysis:





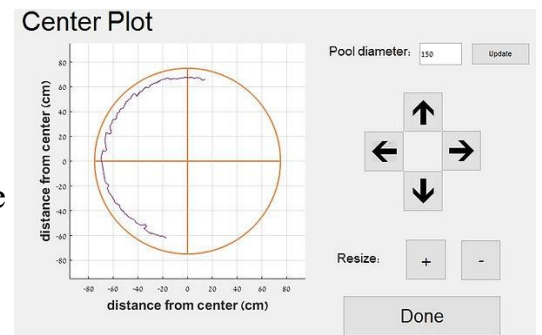
4. Load your probe data by day as described earlier.

- G. On the Days panel, a list of days and probe days will appear.
- H. By choosing a day and clicking on Show files you will be able to choose a file and Analyze a single trial.



- I. By clicking on Analyze all, MUST-C will analyze all your data by days and probe tests.

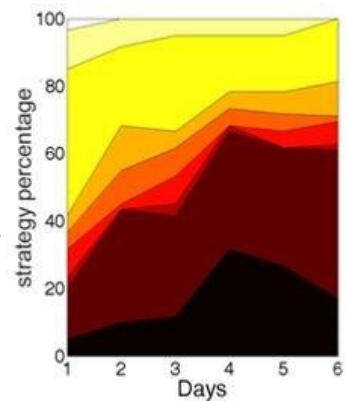
- J. A panel will open, asking you to center 3 or less trials. You will be able to move and resize the plot. This stage repeats itself 3 times.



- J. Now the analysis is taking place!

This might take a few minutes.

- K. Once the graphs appear, you can save it by clicking on Export graph.
- L. You can also save an excel file including trials details and cognitive scores.



To receive download instructions, please send an email to: Eitan.okun@biu.ac.il