

CLOSE LOOP BEHAVIOR WITH BONSAI.



bonsai
VISUAL REACTIVE PROGRAMMING

Hands-on III

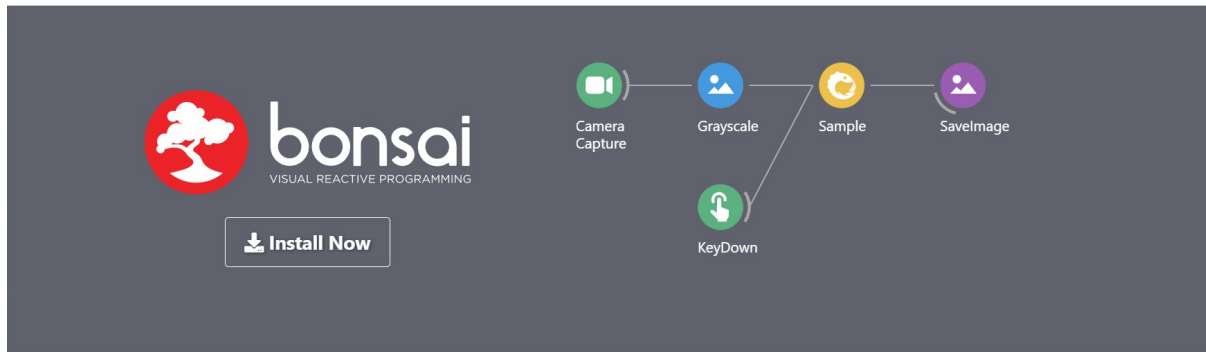
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Latin American Training Program 2022, Montevideo, Uruguay

Bonsai as a powerful tool to study behavior



Open software
Visual Programming Language
Machine Vision
Closed loop



Reactive Algebra



Run and Visualize



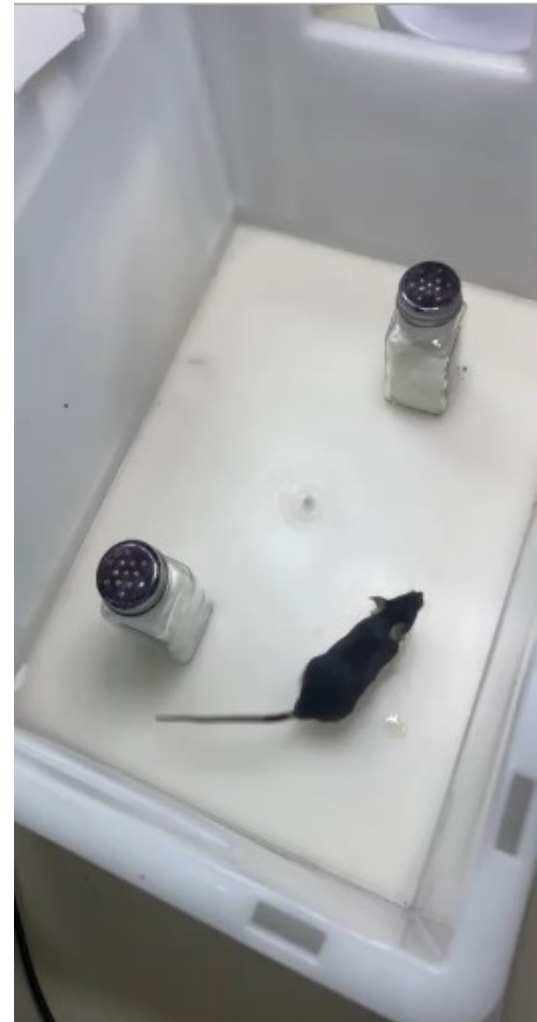
Open Community



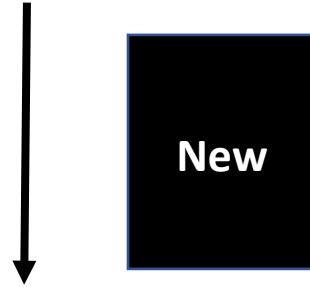
Extensions

<https://bonsai-rx.org/>

Closed-loop



Behavioral task: novel object recognition... with a twist!

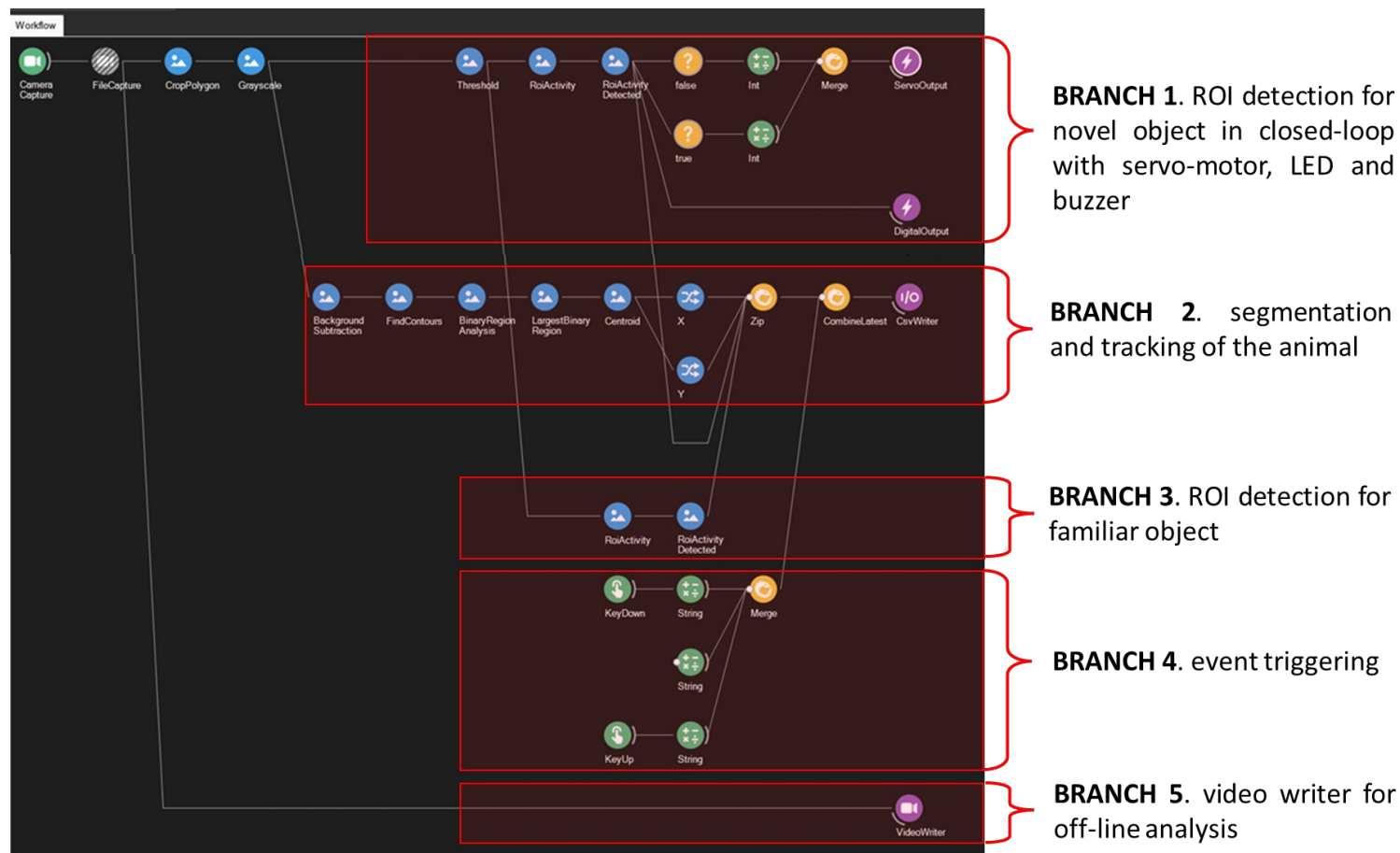


Is it good? Or is it bad?

- I don't know... But I need to choose a behavior

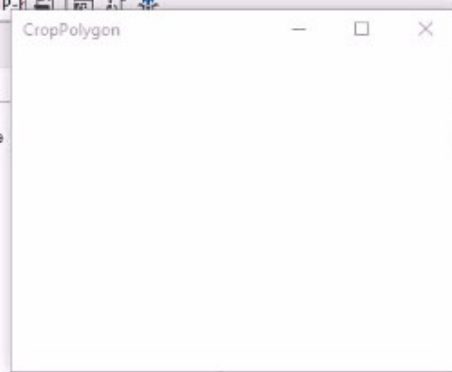
But, what happens if we interfere with the new object?

Workflow

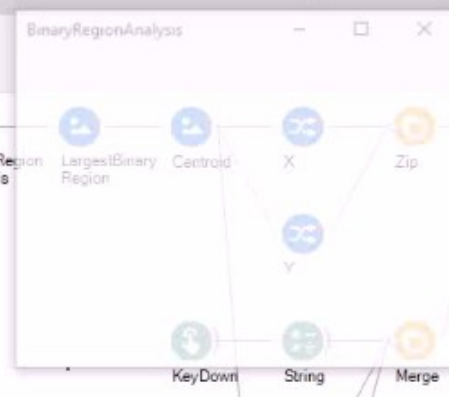




FileCapture



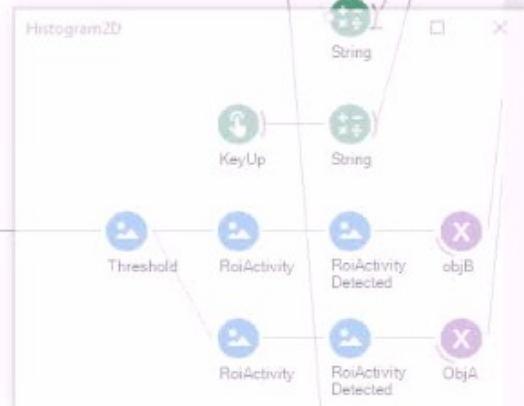
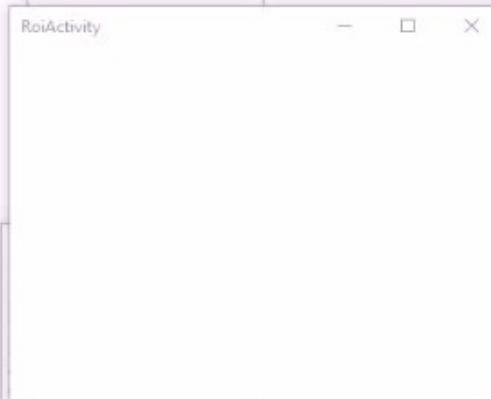
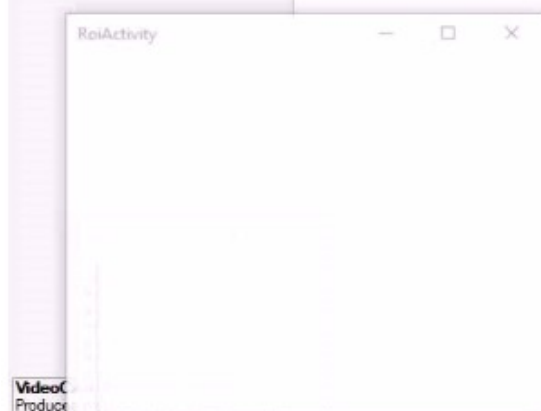
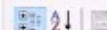
BinaryRegionAnalysis



Properties

BinaryRegionAnalysis

Computes image moments from polygon contours or rasterized shapes to extract binary region properties.



VideoC
Product
acquired
capture d

Experiment design

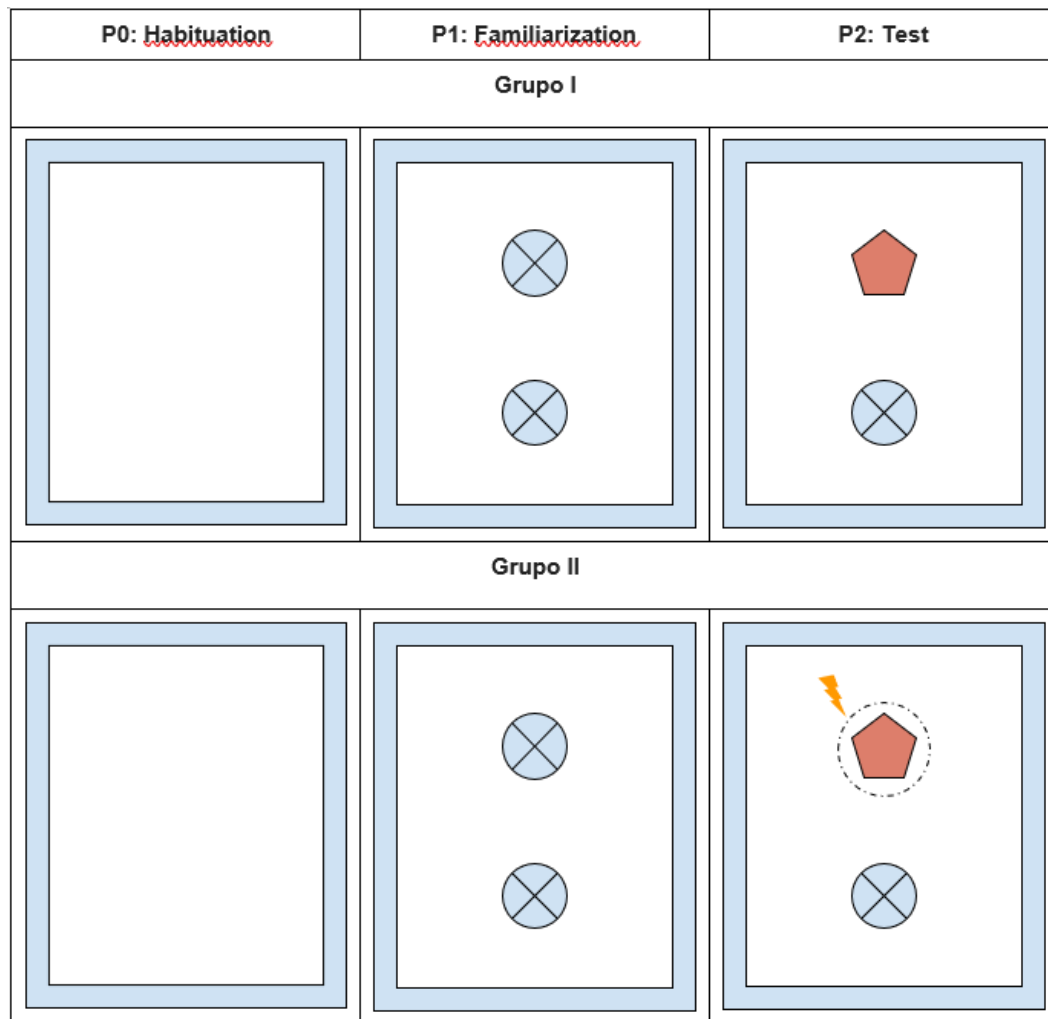
P0: 5min

P0 - P1 15 min

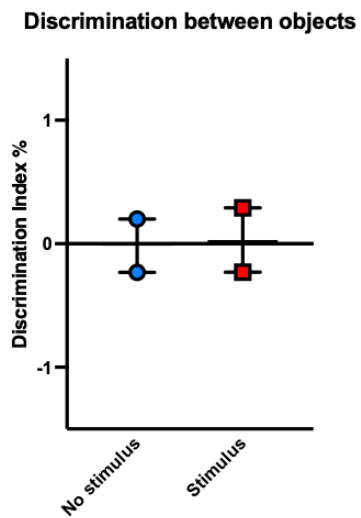
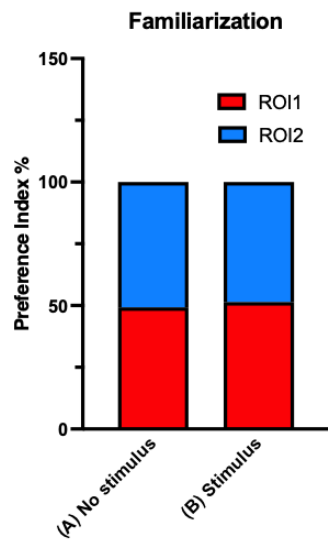
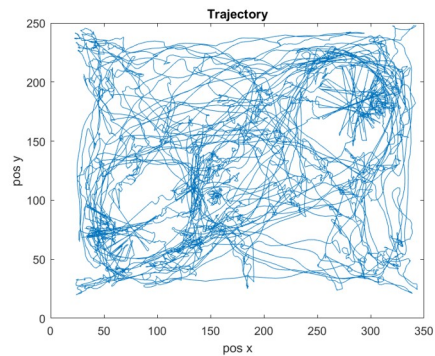
P1: 10min

P1 - P2 60min

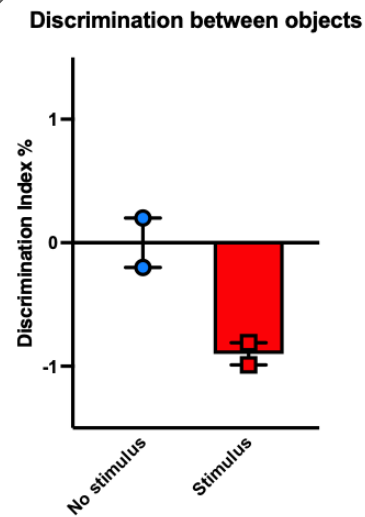
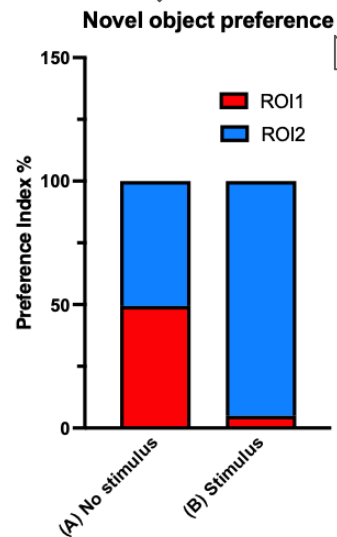
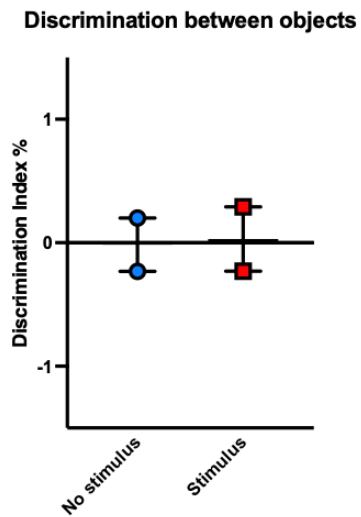
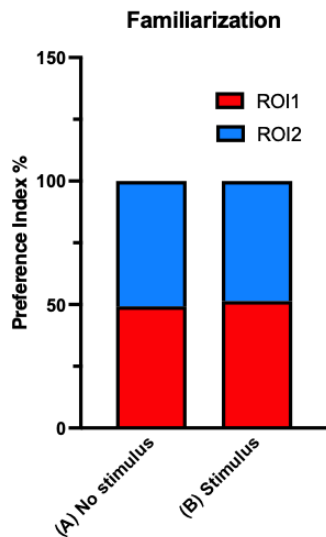
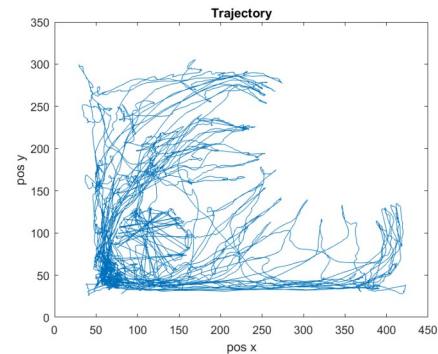
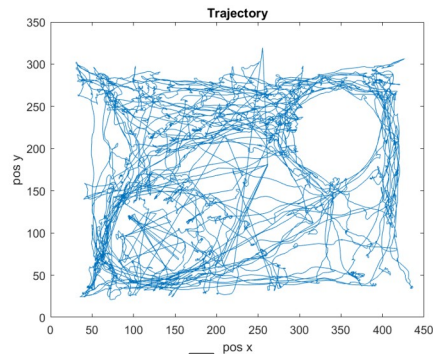
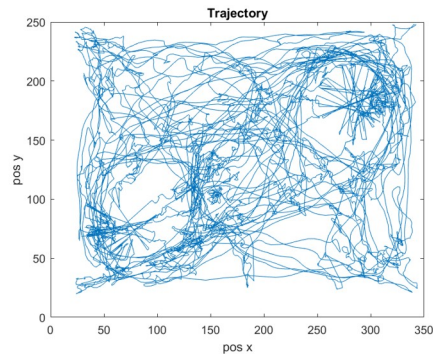
P2: 10min



Results

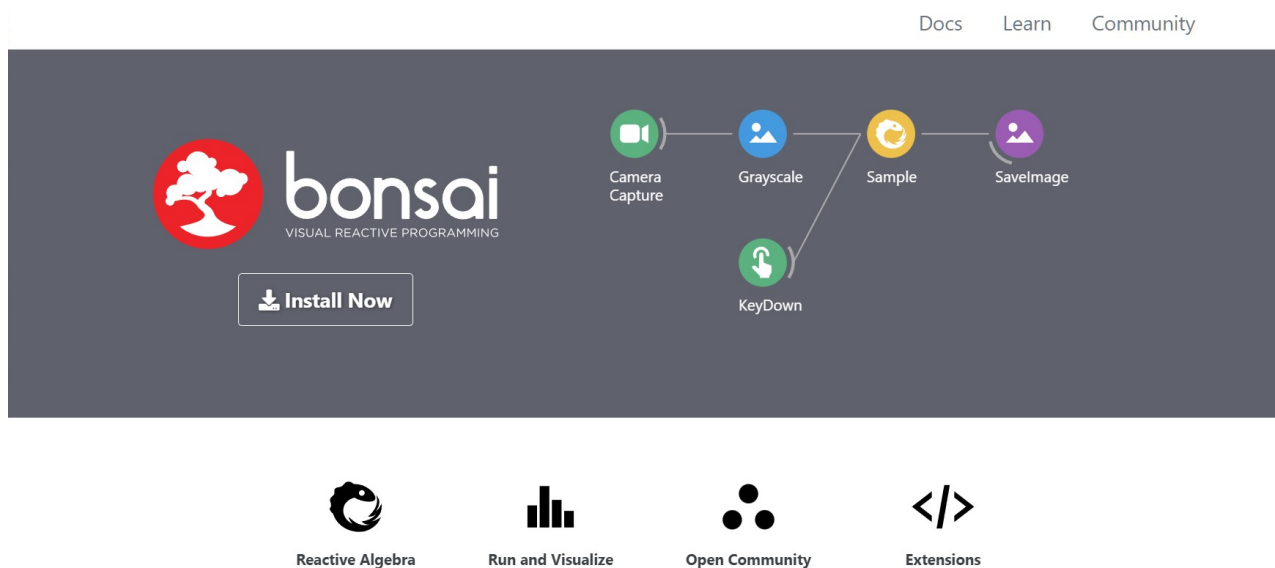


Results



Conclusion

Bonsai is a great tool for the experimental design and for data acquisition



<https://bonsai-rx.org/> ... our advise: download it!

Thanks everyone!



Implementation of Bonsai in other paradigm

Morris Water Maze (MWM)

