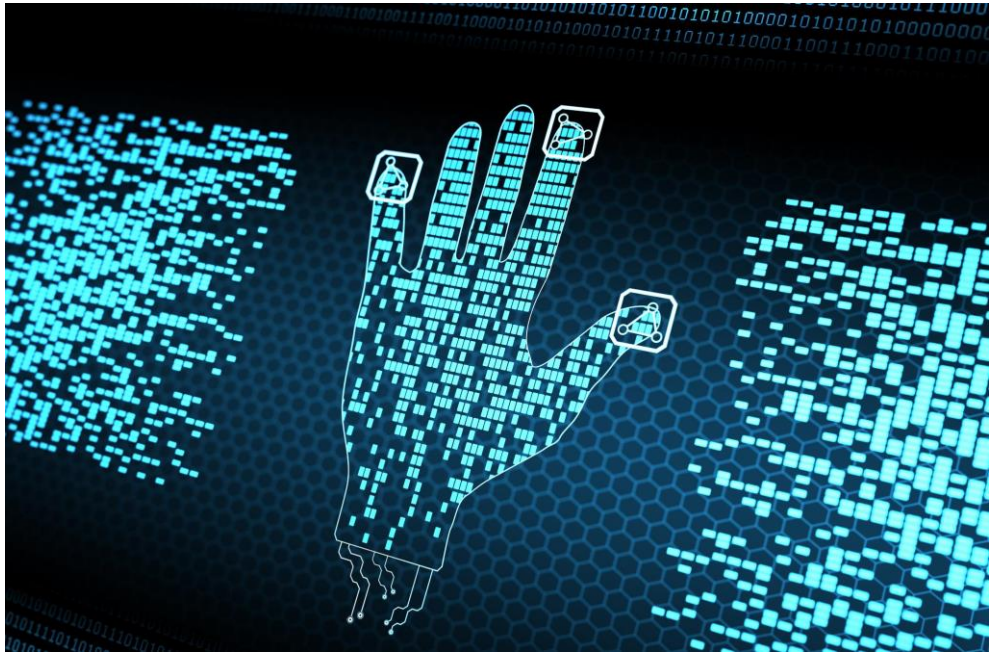
MILO

Motion **I**nput for **L**anguage and **O**peration



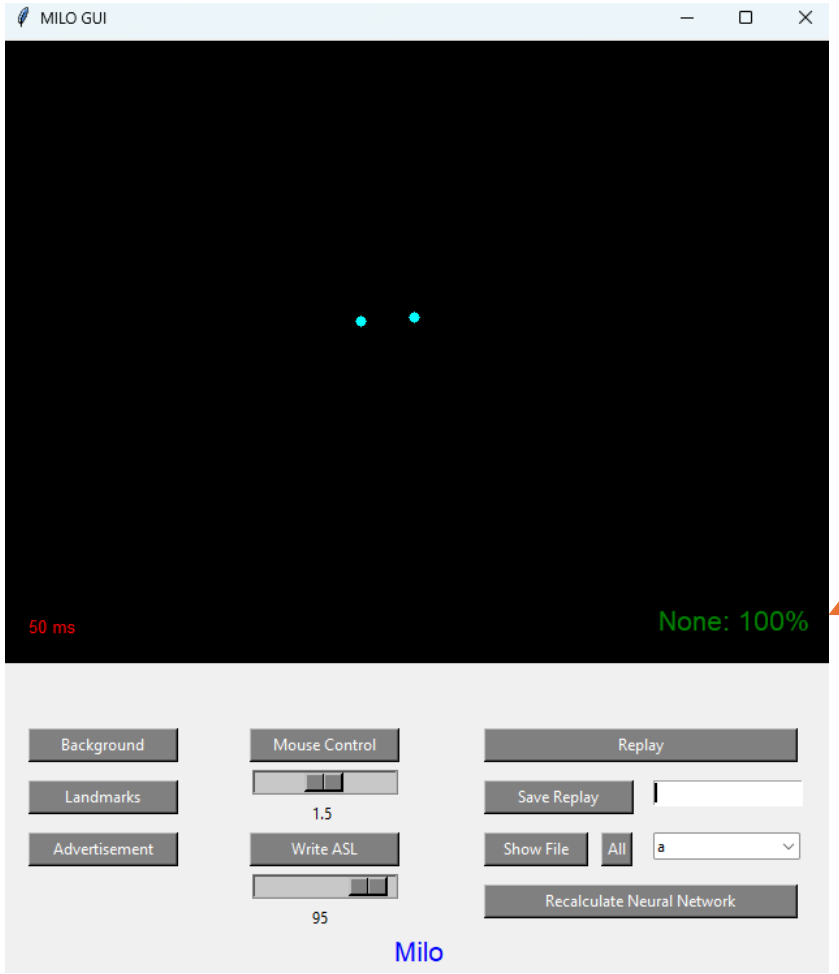
This is MILO!

An easy way to record hand gestures and recognize them!

You can control your mouse and type with specific hand motions.

MILO

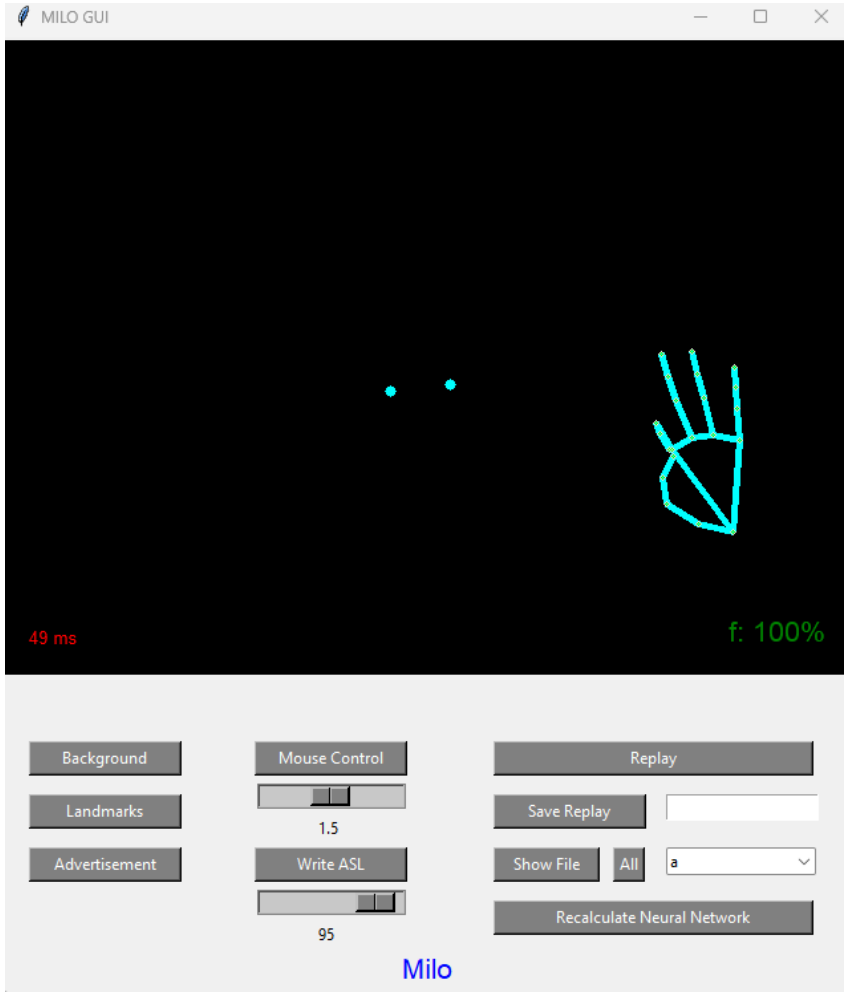
Tracks hands and eyes to look for gestures



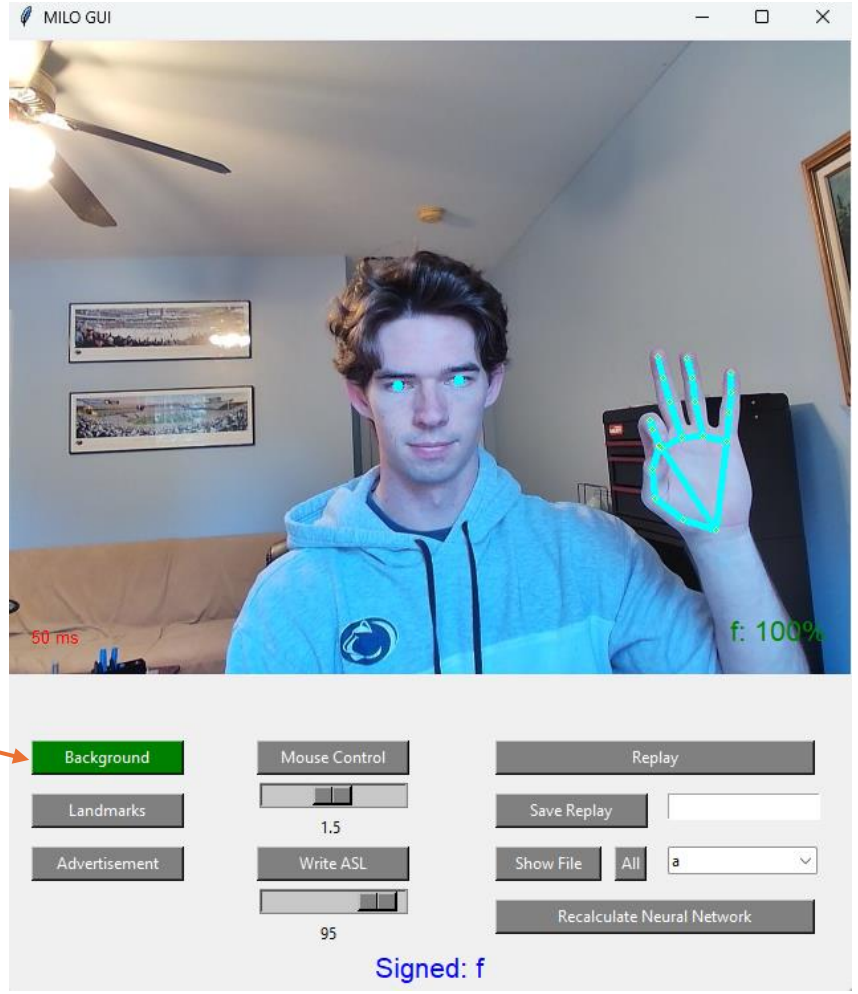
Milo has been trained to recognize the ASL Alphabet.

How confident it is in the gesture

MILO
Background Button



Toggle between showing and hiding your background



MILO
Landmark Button

Position of left-hand features

Position of right-hand features

Top 5 MILO guesses from the neural network

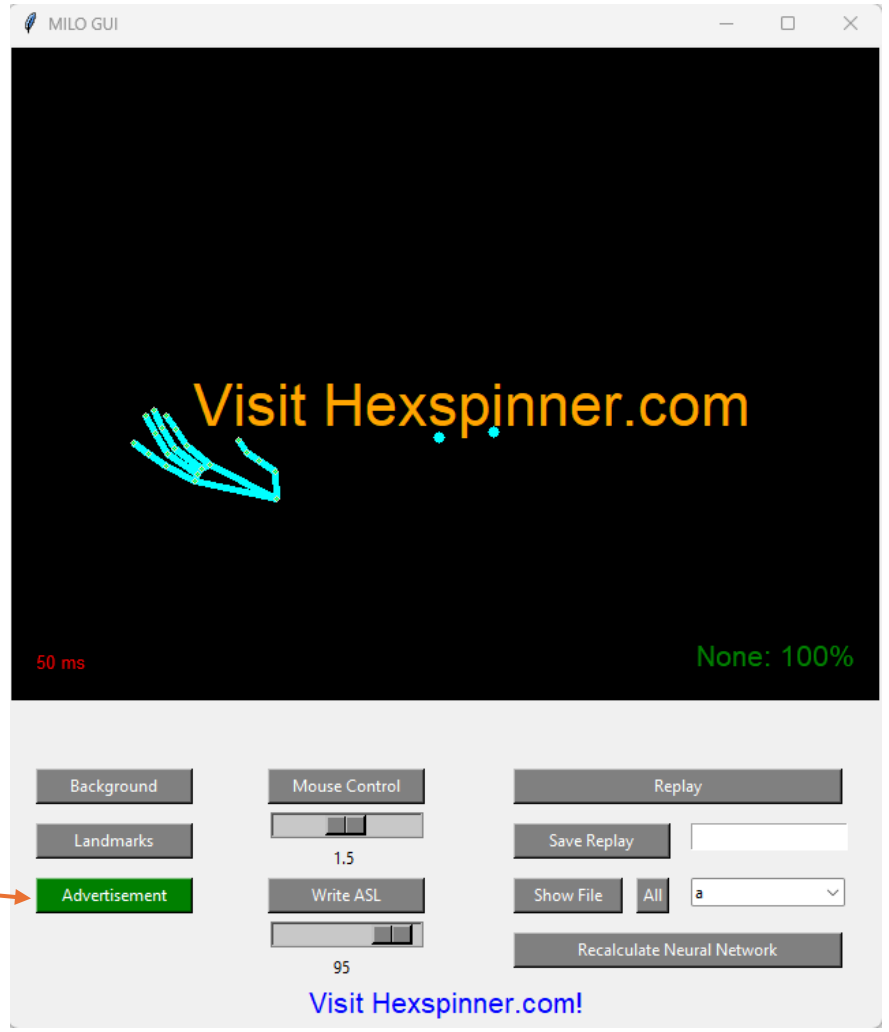
Additional face landmarks displayed

Nose position

Toggle on additional info

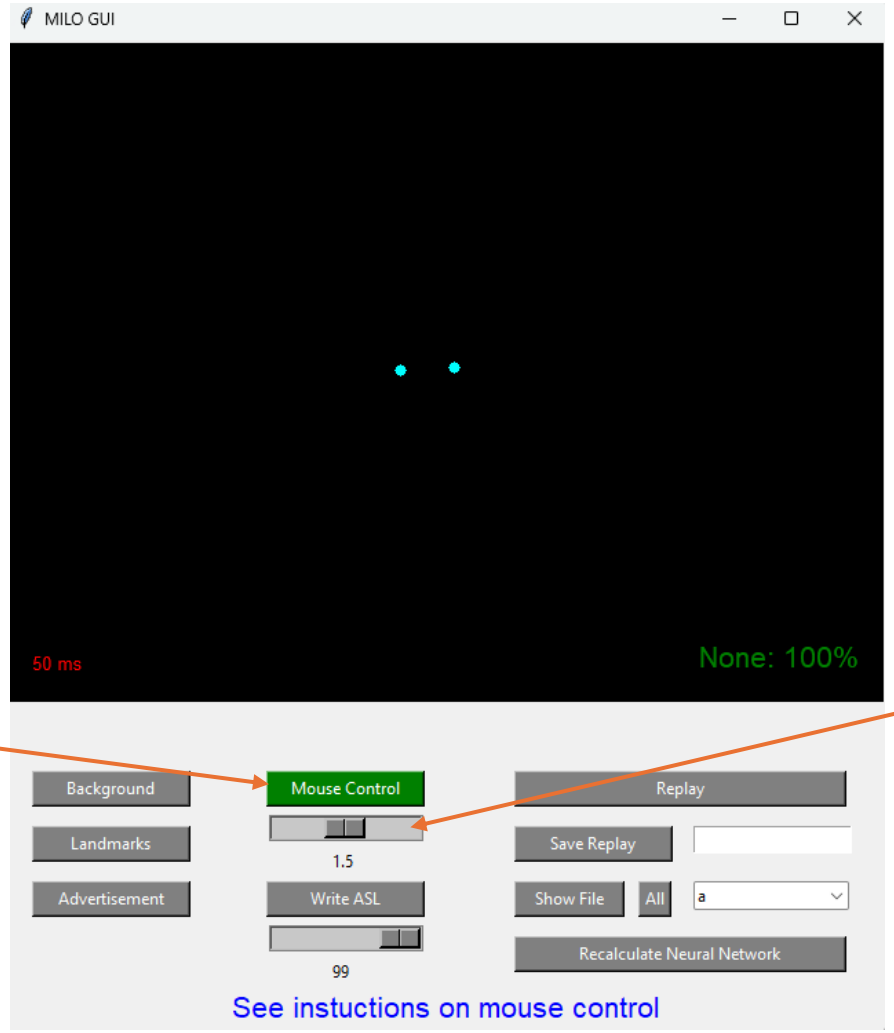
MILO
Advertisement Button

Fidget Toy Advertisement



MILO
Mouse Control Button

You can control the computer mouse with hand motion. See next slides for mouse control instructions.



Toggle mouse control

Slider for mouse sensitivity

MILO
Mouse Control Instructions

Control the computer mouse with your hands!

- Use your left hand to toggle between: Off, Mode 1, and Mode 2.
- Use your right hand to move mouse and left/right/middle click

Mode 1 (Direct control)

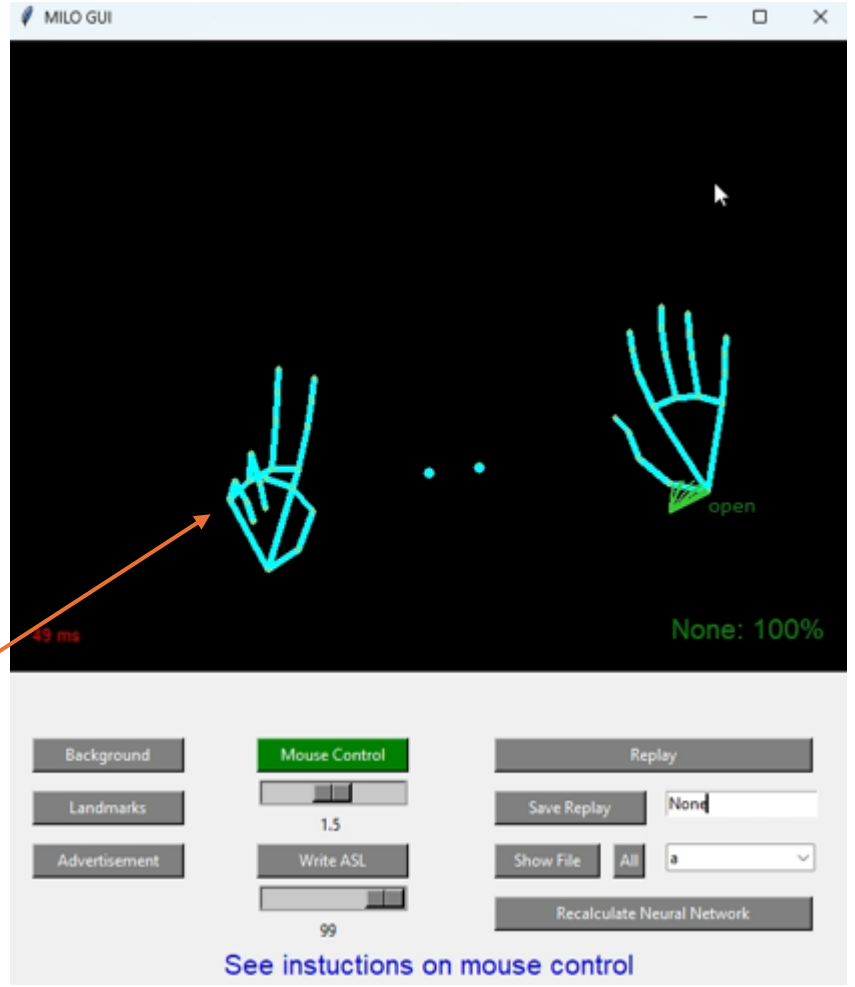
Mouse directly follows hand:

- Left pinky down
- Left index finger up
- Right hand open

Mode 2 (Proportional Control)

Mouse movement changes by how far you are from the start position:

- Left pinky down
- Left index finger up
- Left middle finger up
- Right hand open



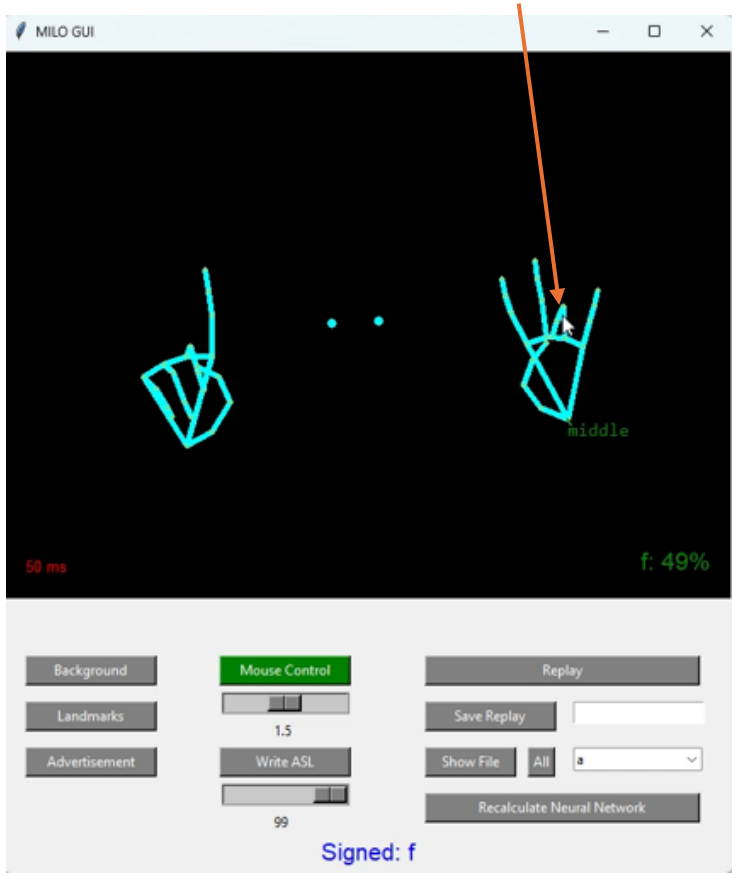
MILO
Mouse Control Instructions

Use your right hand to left, right, or middle click the mouse. Left hand can be in either mode 1 or mode 2.

Left click: Right index finger down

Right click: Right middle finger down

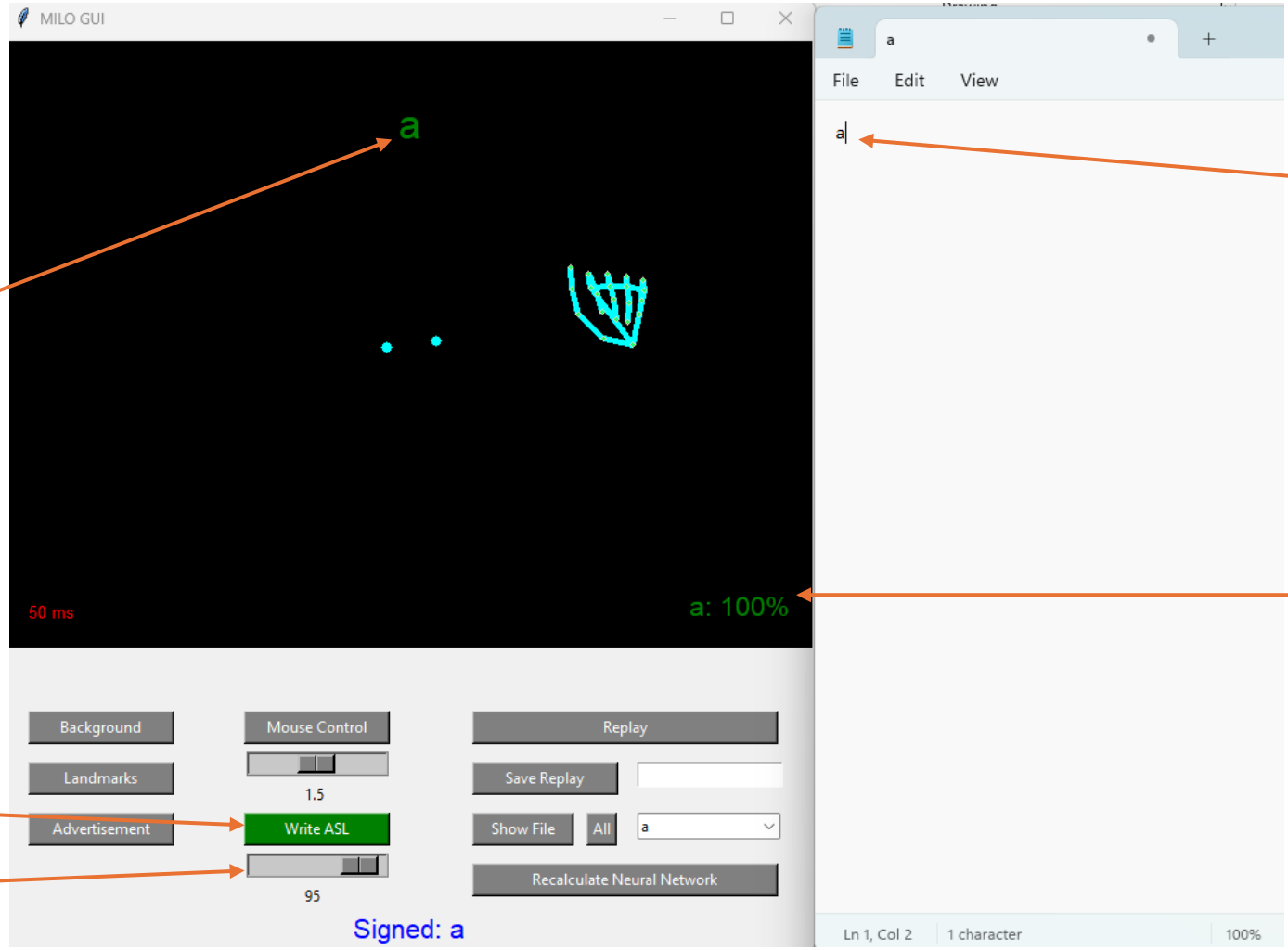
Middle click: Right ring finger down



MILO
Write ASL Button

You can type with MILO using ASL!

The typed value will appear on screen as well.



Will type the letter like if you were using your keyboard

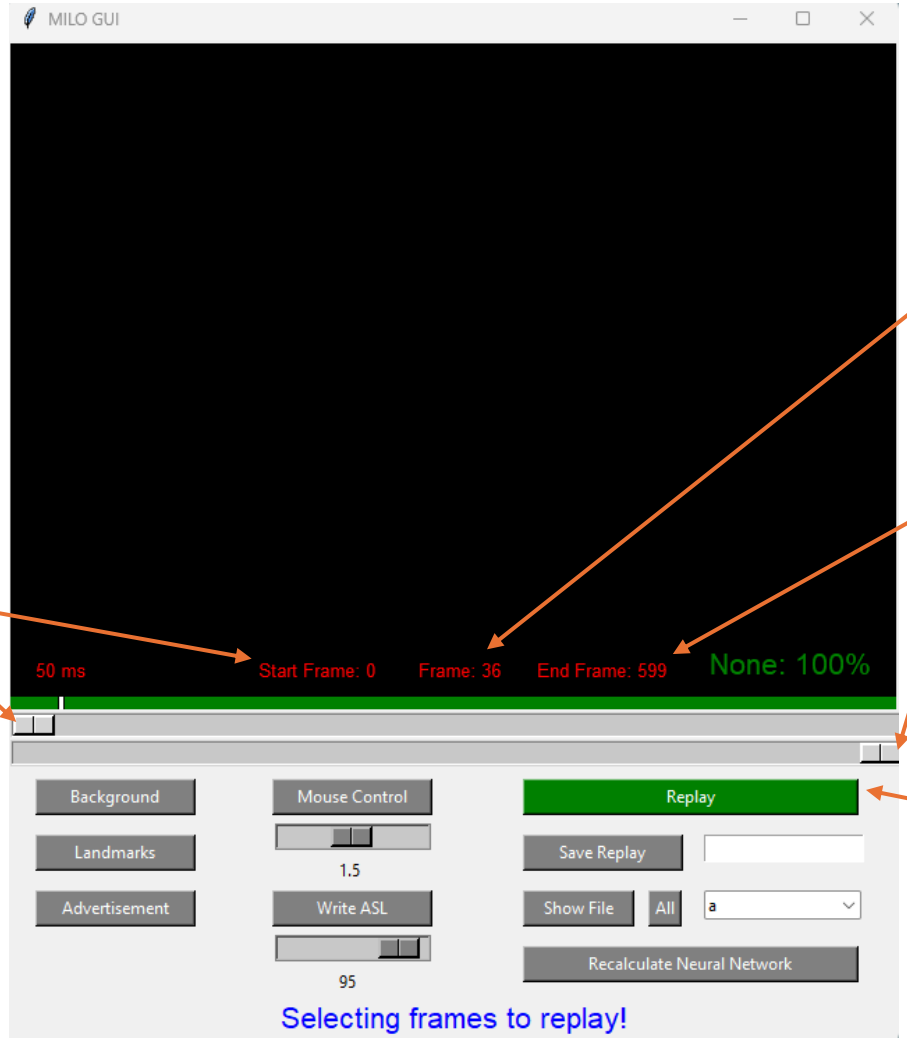
Confidence %

Toggle Write ASL

Minimum confidence required to write the reading

MILO
Replay Button

Replay 30 seconds worth of saved motion



Current frame being played

Set end frame

Set start frame

Toggle Replay

MILO
Save Replay Button

Save a 1.5 second gesture

Must be 31 frames (bar turns light green if data is savable)

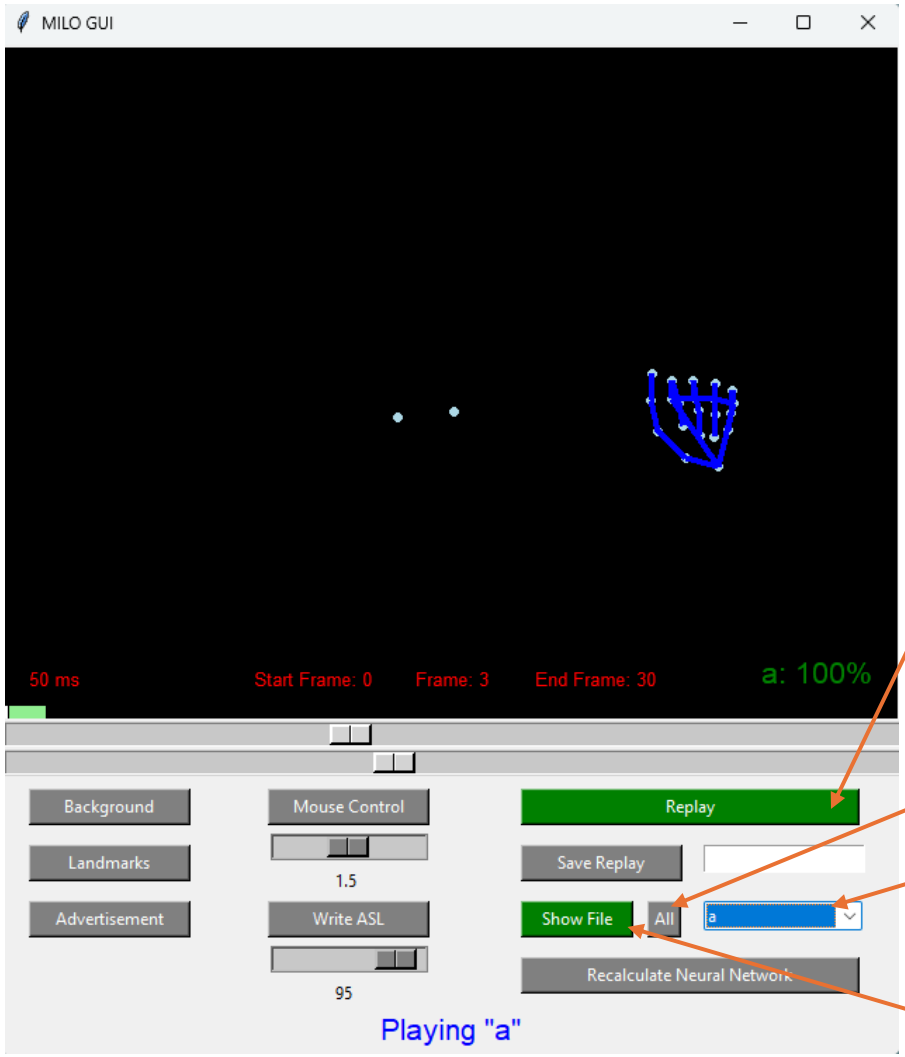
Replay must be selected

Name the gesture

Hit save replay if all other criteria on this page is met.

MILO
Show File Button

Replay a previously saved gesture



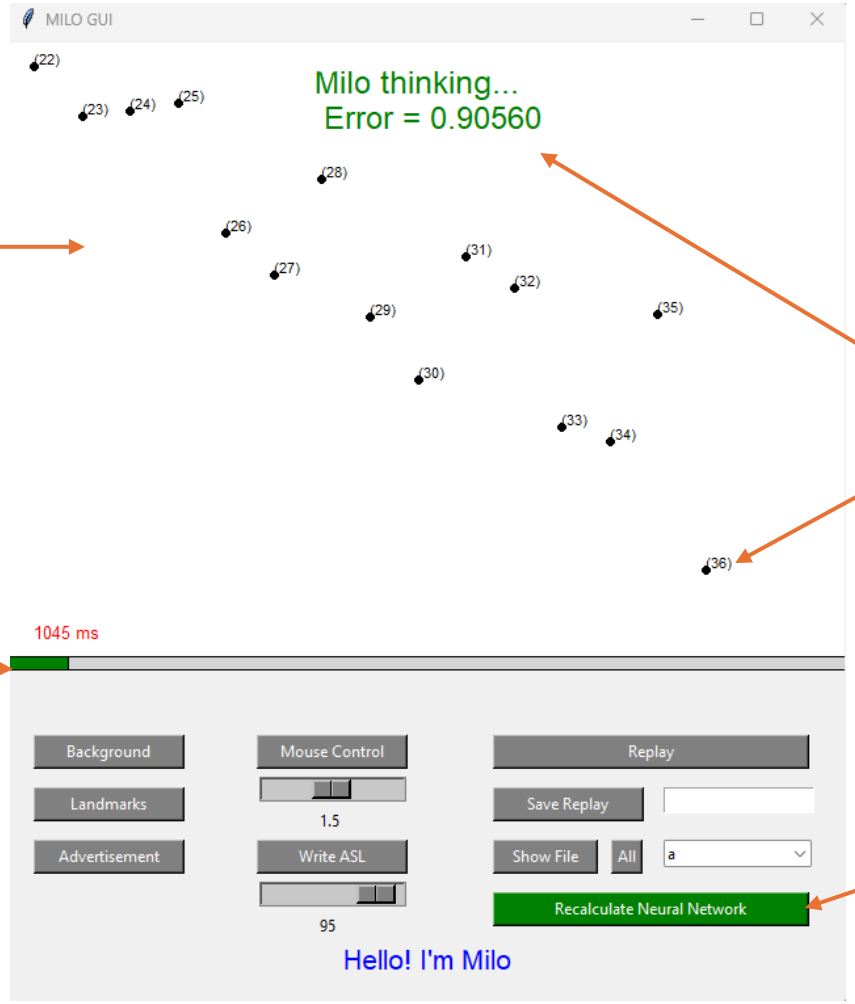
Replay must be selected

The All button displays all saved gesture iterations

Select a gesture from the drop down

Select the Show File button to replay the selected gesture

MILO
Recalculate Neural Network Button



The Recalculate Neural Network Button will take some time to run. Use this button after you save new gestures.

Neural network error plot

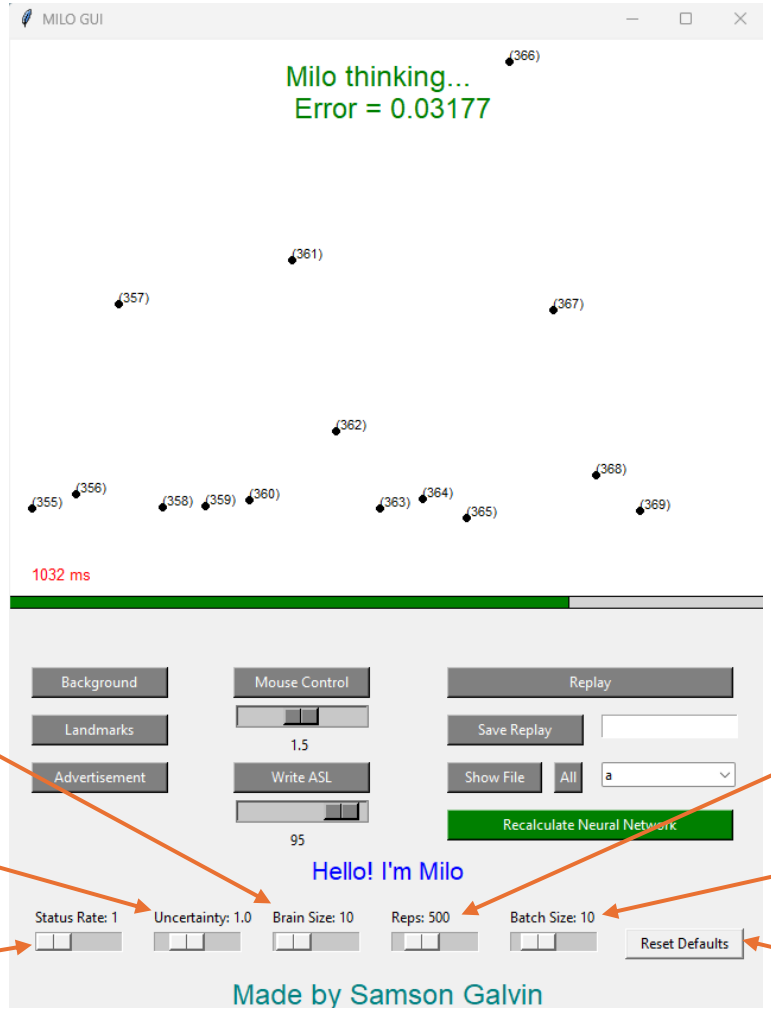
Current error

Progress bar

Recalculate Neural Network Button

MILO
Recalculate Neural Network Button

If you extend the bottom of the GUI, there are additional Neural Network Settings.



Increases the neural network size. Larger is more precise but takes longer to run.

Larger Uncertainty will make the neural network less confident in its guesses.

Status rate is how often your plot will update.

TIP!
The Uncertainty slider will affect the current results, not just the recalculation of the neural network. If you want more confidence, slide it to the left and you will see more gestures reading 100%.

Larger Reps will take longer to run, but will make the neural network more accurate

Larger Batch Size will run faster, but will likely be less precis and accurate

Resets the Neural Network settings back to default values

MILO

Thanks for checking out my project!

Note: additional training may be required to get MILO to accurately recognize your gestures.

If something isn't reading, just record it and recalculate the neural network! Good Luck!