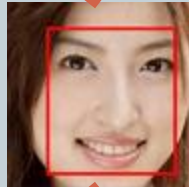


Welcome to Image Knowledge Builder

1

Monitor a region in live video and record images when a known event occurs.



Sort a folder of images based on the content of a region of interest.



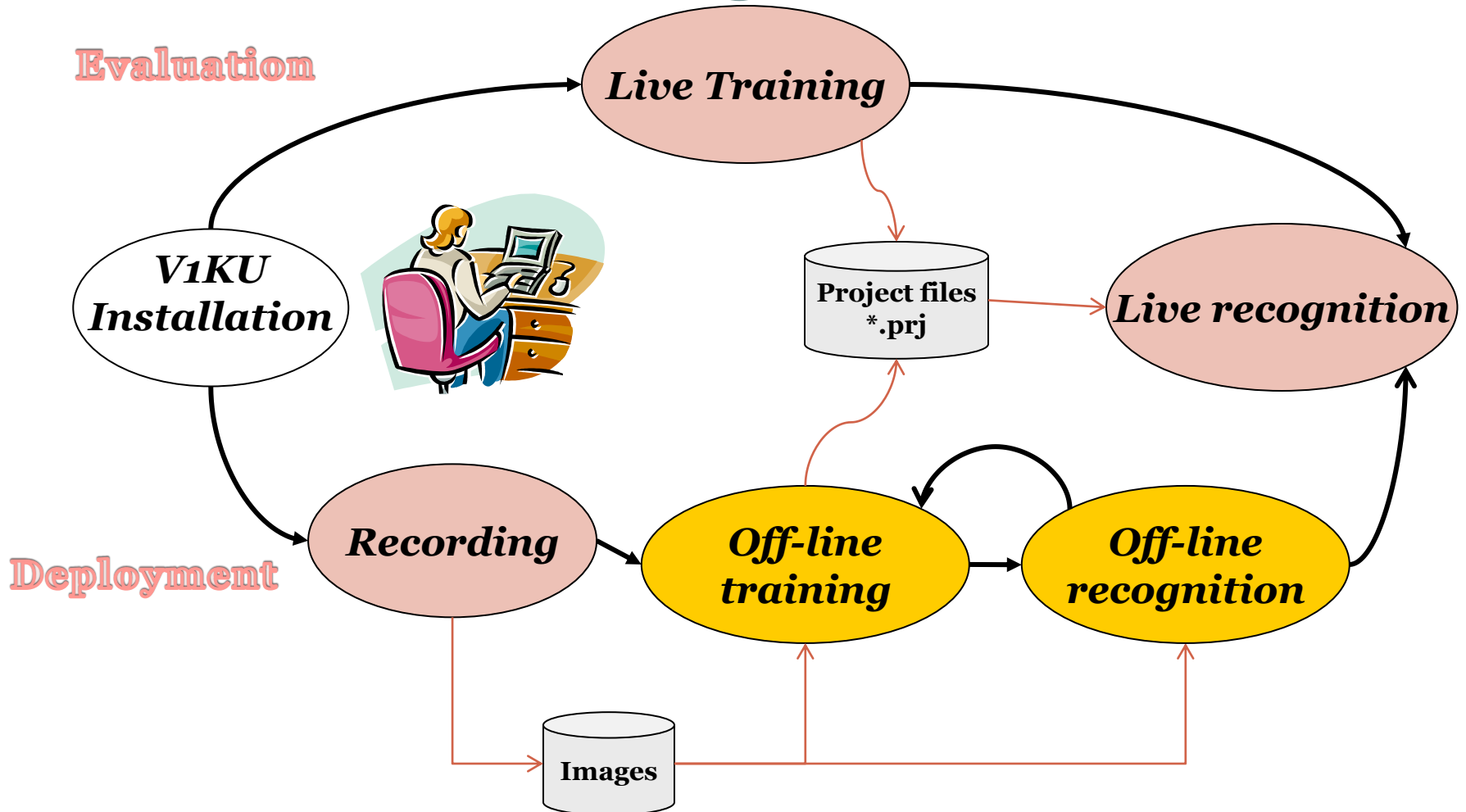
Inspect parts passing on a conveyor and activate actuator if defective.



Monitor a region in live video and record images when an unknown event occurs.

Getting Started

2



Main Control Panel

3

To work on continuous video

Take snapshot

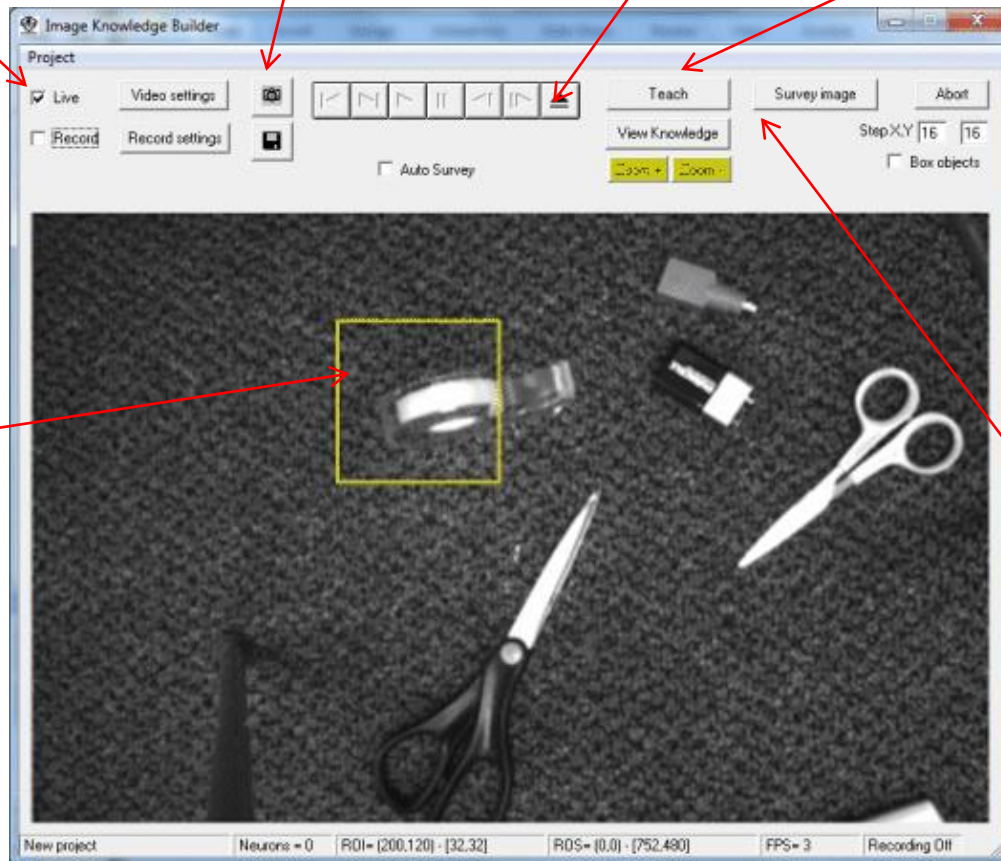
To work with image files

To teach examples of objects

Region of interest to either learn or recognize

To find the recognized objects

To review the taught examples

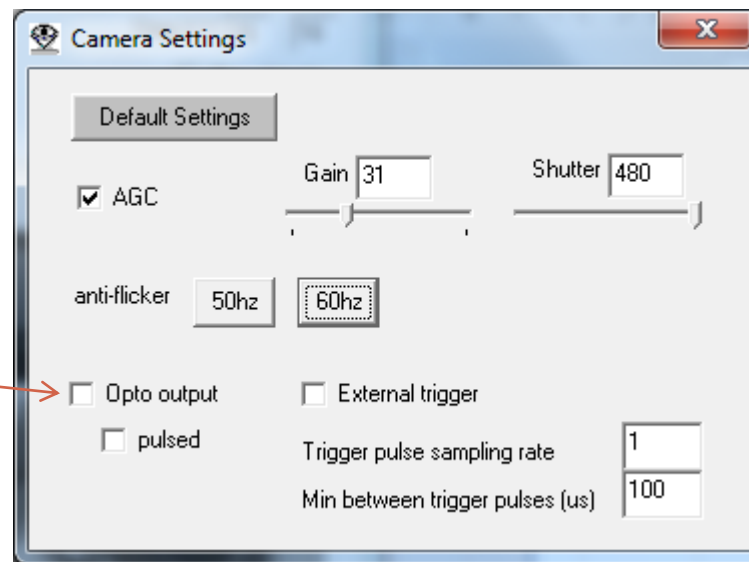


Video Settings

4

If Automatic Gain and Exposure is not appropriate,
adjust the settings to get the best image quality

Check only when
ready to connect
the V1KU board
to actuators

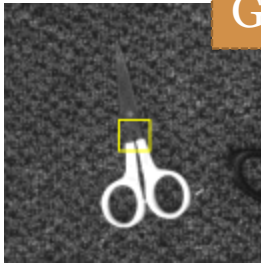


Define Your Region of Interest

5

ROI= a minimum discriminating portion of an object

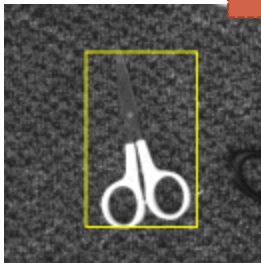
Good size



Minimum exclusive feature of a scissor. Sufficient to detect the presence of a scissor.

Left - Mouse click → Move
Right- Mouse click → Resize
Arrow keys → Move

Too large



Lots of background and irrelevant information. A stain on the carpet could become part of the reference pattern for the scissor!

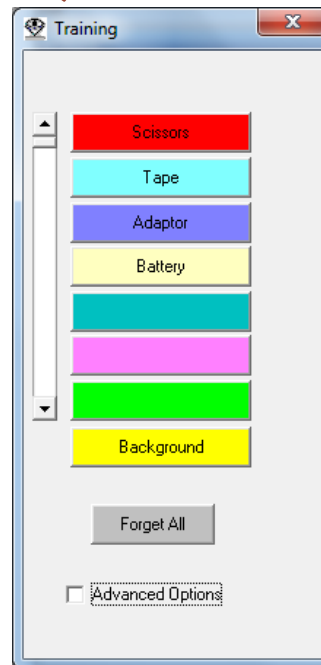
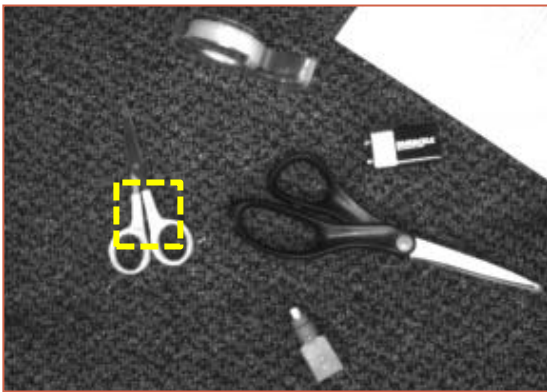
Note: When resizing the ROI, the program will keep the existing aspect ratio if a knowledge already exists. You can waive this constraint by selecting the New project command

Teaching Panel

6

Move ROI over
the object to
learn

Click on the corresponding
category button

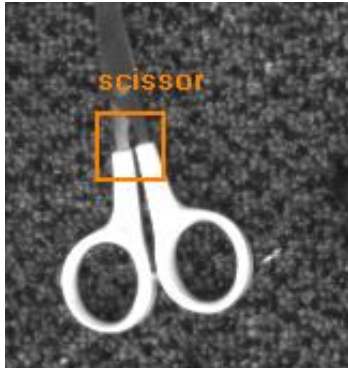


Left – Mouse click
→ Learn region
Right- Mouse click
→ Change name
Shift-Right- Mouse click
→ Change color

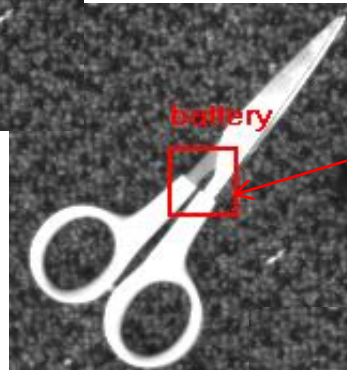
Verify and Correct

7

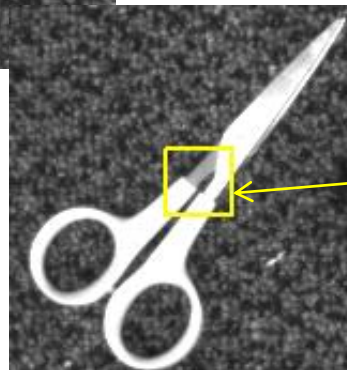
Move the ROI over the image manually, observe the results and correct if necessary



Good response, do nothing.



Incorrect response because confusion with “Battery”. Click on the “Scissor” button in the Training panel.

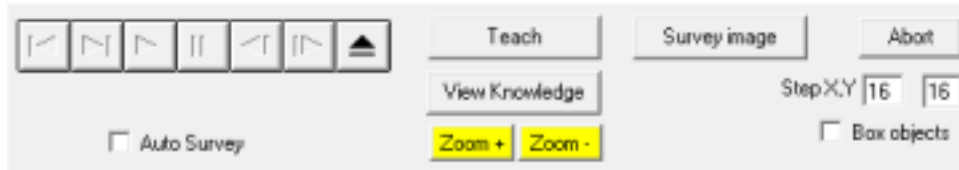


Incorrect response because lack of recognition. Click the “Scissor” button in the Training panel.

Survey an Image Content

8

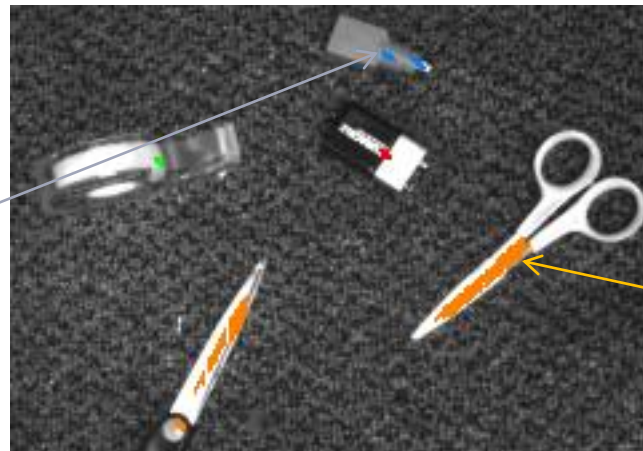
The Survey function moves the ROI over the entire image and tags the recognized location with the color associated with the recognized category



The smaller the scanning step, the more accurate the response, but also the slower the process.

This function is only available for snapshots or still images

The ROI at this pixel location is recognized as “Adaptor” (i.e. tagged in blue)



The ROI at this pixel location is recognized as “scissor” (i.e. tagged in orange)

The color legend is given by the buttons of the Training panel!

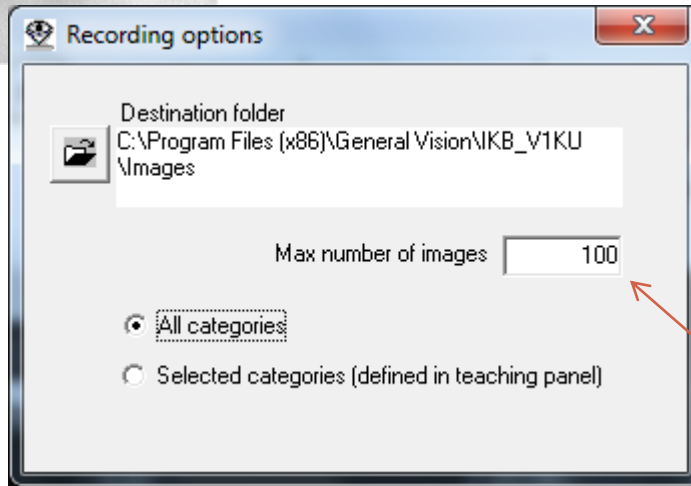
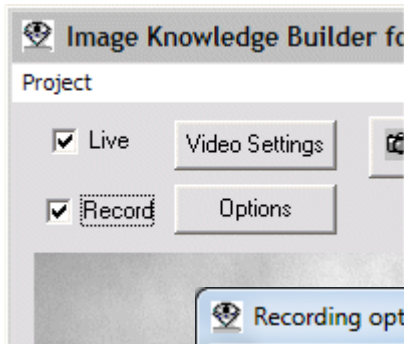
Record Images

9

Collect images for training and illustrating...

- Variety of objects (good and bad)
- Variety of lighting and background
- Variety of orientation and scale
- Others

Possibly, create a folder per case study



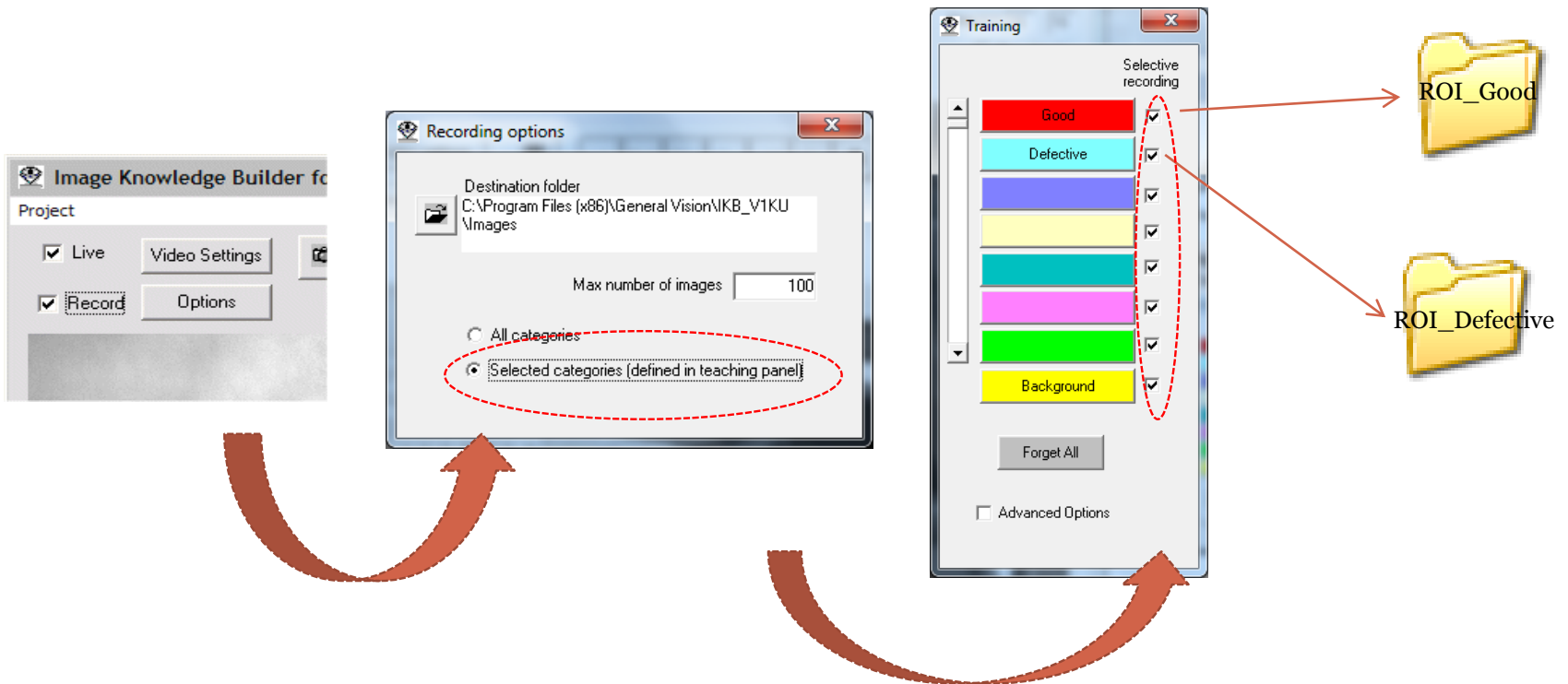
Number of images per session initiated by checking "Record"

Selective Recording

10

Record based on the category of the ROI in the image

Let IKB_V1KU monitor an ROI for hours in video images or over thousands of images in a folder. Review the selected events at a later time.

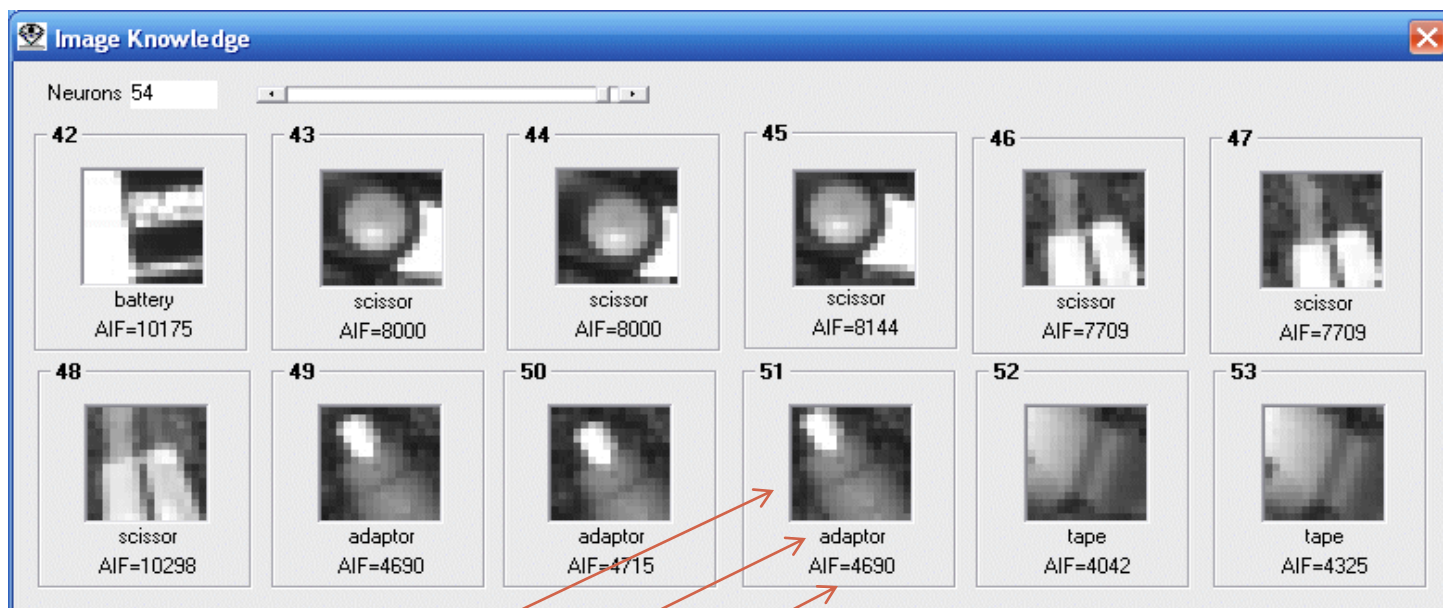


View Knowledge

11

This utility can help you verify that no erroneous prototypes were taught

- Erroneous because of a wrong category assignment
- Erroneous because of a wrong example selection



Neuron Memory
Category
Active Influence Field