

Easy_Trainer: Frequently Asked Questions

EASY_VIDEO_TRAINER

It seems that I have to learn an object many times before correct recognition. Should training be so tedious?

For indoor applications, it is common that the flickering of the ambient light causes variations of intensity which are unseen by the human eye because of their high frequency, but definitely present in images captured at 60 frames per second. This explains why the response of the neurons also flickers. The remedy is to learn the object over several frames so the neurons can learn its representation under different lighting if applicable.

A common mistake which can cause a tedious training is to select a region of interest which is too big and include irrelevant information, especially from a varying background. One way to understand why a knowledge does not produce accurate results is to review the contents of the neurons (under View/Models menu). If the contents of a neuron is not relevant to what should be recognized, a new learning session should be started.

EASY VIDEO AND IMAGE TRAINER

I correct the erroneous recognition of Category A by teaching Category B, Category B is recognized but no neuron is added to the knowledge

Easy_Video_Trainer reports the result of the recognition executed by the CogniMem chip. This result is limited to the category of the neuron with the best match between its reference pattern and the incoming pattern extracted from the live video. However, it is possible that other neurons also recognize the incoming pattern, but with a lesser confidence level. The behavior described in the question above is typical of a recognition with uncertainty where both the category A and B are recognized: By teaching B, the influence field of the neuron claiming the best match as A is reduced, thus transferring the best match to a neuron recognizing B. The neural network automatically decides that no neuron has to be committed to produce the expected recognition of category B.

I correct the erroneous recognition of Category A by teaching Category B, but the engine does not take my request into account

This behavior is typical when the region of interest is recognized by multiple neurons which do not agree about the category but have equal confidence level. In such case, Easy_Video_Trainer reports category A because it is the first one in numerical order. Since B is a best match also (only not displayed), teaching B does not create a new neuron. If your application requires to identify all these uncertainties, you can program a more sophisticated interface than the Easy_Video_Trainer and report the status of the classification (NSR register) and read all the recognized categories with a series of Read Category commands. Refer to the CogniMem SDK for more information.