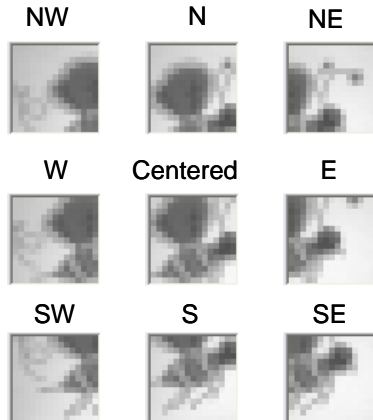


CM1K for target tracking?

WHAT TO TEACH?

A simple demonstration of target tracking can be made with Easy_Video_Trainer by learning a known target at 9 different positions within a region of interest centered in the field of view:



When the recognition logic of the CogniMem chip is active, the recognized category is transmitted to the GPIO lines at frame rate. This means that a motion controller properly interfaced with CM_IR (both mechanically and electronically) could always re-center the target to be in the middle of the field of view.

This live video recognition is possible if the pins RECO_EN and VI_EN of the chip are set high, and when bit 0 of the Recognition Status Register is set to 1.

HIGH SPEED RECOGNITION OF A COOPERATIVE TARGET

A cooperative target can be described as a person moving in front of the camera in order to get access to a building, or a child is expected to wave a play card in front of a toy to hear a specific sound, etc.

If an object to recognize is expected to appear at one time within the region of interest, the simple recognition logic of the chip might be suitable AS IS considering that it looks for the target in 60 frames every second! The probability to miss the detection of the target can be avoided by training the neurons thoroughly to recognize the target at different position, orientation and scale within the region monitored by the chip. You can also add a verification that the target is detected more than once in n consecutive frames to reduce false positive.

CUSTOMIZATION FOR NON COOPERATIVE TARGET

The position of the region of interest can only be modified through an external controller and this update has to occur in between video frames when the recognition engine is not busy. Such controller can move the position of the region of interest by sending two simple Write commands through the parallel or serial bus.