

# CogniSight SDK For LabVIEW

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A TOOLBOX  
CONNECTING LABVIEW TO A  
NEUROMEM SILICON NETWORK

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## CONTENTS

Introduction.....	2
Content.....	<b>Error! Bookmark not defined.</b>
Bin folder .....	3
VIs .....	3
Controls .....	3
Examples.....	3
How to change NeuroMem platform .....	4

## INTRODUCTION

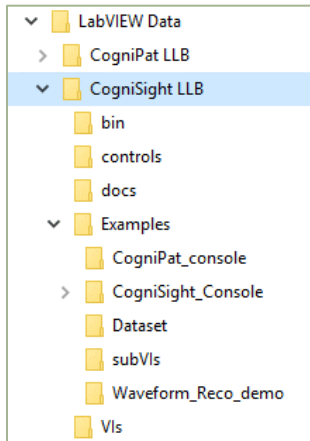
The CogniSight SDK for LabVIEW is a wrapper for the CogniSight Dynamic Link Library which interfaces to a NeuroMem network for the learning and recognition of patterns derived from images and any data type.

The description of the CogniSight engine and its function library is therefore available in the [CogniSight SDK manual](#).

## INSTALLATION

Several versions of the DLL exist. They have the same entry points but include different drivers for access to the NeuroMem hardware:

- |                             |  |
|-----------------------------|--|
| - CogniSight_Simu (default) | Cycle accurate simulation of the NeuroMem network of 1024 neurons  |
| - CogniSight_NeuroShield    | Cypress USB serial driver (and simulation if board not found)      |
| - CogniSight_NSnK           | FTDI USB driver for NeuroStack (and simulation if board not found) |



### BIN FOLDER

- |                  |  |
|------------------|--|
| - Win32/         | CogniSight_Simu.dll, CogniSight_NSnK.dll, CogniSight_NeuroShield.dll |
| - x64/           | CogniSight_Simu.dll, CogniSight_NSnK.dll, CogniSight_NeuroShield.dll |
| - CogniSight.dll | DLL accessed by the VIs (can be any of the above copied and renamed) |

### VIS

- Library of virtual instruments calling the functions of the CogniSight\_xyz.dll
- The documentation of each VI can be found in the [CogniSight SDK manual](#) for the image related functions and the [CogniPat SDK manual](#) for the pattern recognition functions agnostic to data types.

### CONTROLS

- Controls and indicators commonly needed when interfacing to a NeuroMem network including, but not limited to, the list of supported hardware platforms, the display of the network's response to a new stimuli, the content of a single neuron, etc.

### EXAMPLES

- CogniSight\_Console
  - o A generic console to practice with the neurons and understand their behavior to learn and recognize objects in images
- CogniPat\_Console
  - o A generic console to practice with the neurons and understand their behavior to learn and classify vectors. Vectors can derive from any data types.
  - o A typical scenario which can be reproduced is described in the [http://www.general-vision.com/documentation/TM\\_TestNeurons\\_SimpleScript.pdf](http://www.general-vision.com/documentation/TM_TestNeurons_SimpleScript.pdf)

- Waveform\_Reco\_Demo
  - o Load a waveform, select a window size and teach sections of the waveform as arbitrary category A or B, understand how the entire waveform is classified after each learning.
  - o The demonstration is documented at [http://www.general-vision.com/documentation/TM\\_WaveformReco\\_Demo.pdf](http://www.general-vision.com/documentation/TM_WaveformReco_Demo.pdf)

## HOW TO CHANGE NEUROMEM PLATFORM

By default the CogniSight.dll stored in the bin folder and called by the examples is the equivalent of the CogniSight\_Simu.dll.

If you wish to interface to the NeuroShield board, copy the CogniSight\_Neuroshield.dll and cyusbserial.dll from the appropriate subfolder Win32 or x64 depending on your version of LabVIEW. Paste these DLLs to the bin folder and rename the CogniSight\_Neuroshield.dll as CogniSight.dll.

If you wish to interface to the NeuroStack board, copy the CogniSight\_NSnK.dll from the appropriate subfolder Win32 or x64 depending on your version of LabVIEW. Paste this DLL to the bin folder and rename it CogniSight.dll.