

CogniPat SDK For LabVIEW

A TOOLBOX
CONNECTING LABVIEW TO A
NEUROMEM SILICON NETWORK

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INTRODUCTION

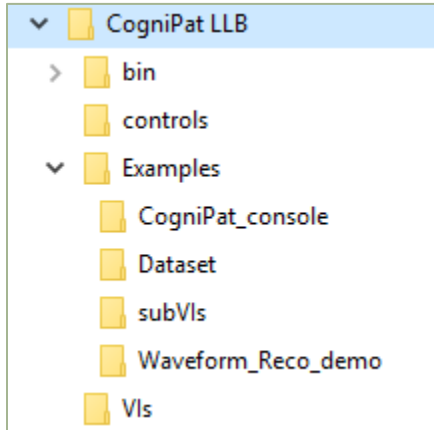
The CogniPat SDK for LabVIEW is a wrapper for the CogniPat Dynamic Link Library which interfaces to a NeuroMem network for the learning and recognition of patterns derived from any data type.

The description of the CogniPat engine and its function library is therefore available in the [CogniPat 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:

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



BIN FOLDER

- Win32/ CogniPat_Simu.dll, CogniPat_NSnK.dll, CogniPat_NeuroShield.dll
- x64/ CogniPat_Simu.dll, CogniPat_NSnK.dll, CogniPat_NeuroShield.dll
- CogniPat.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 CogniPat_xyz.dll
- The documentation of each VI can be found in the [CogniPat SDK manual](#).

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

- 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
- 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

HOW TO CHANGE NEUROMEM PLATFORM

By default the CogniPat.dll stored in the bin folder and called by the examples is the equivalent of the CogniPat_Simu.dll.

If you wish to interface to the NeuroShield board, copy the CogniPat_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 CogniPat_Neuroshield.dll as CogniPat.dll.

If you wish to interface to the NeuroStack board, copy the CogniPat_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 CogniPat.dll.