DeepView

Empowering LabVIEW with Deep Learning

DeepView (Deep Learning Toolkit for LabVIEW) is an award-winning product designed to bring the possibilities of deep learning into LabVIEW and provide access to a variety of applications for LabVIEW developers

FEATURES AND FUNCTIONALITY

- Create, train and deploy Deep Neural Networks with LabVIEW
- Accelerate DNNs on GPUs
- Visualize network topology and display common metrics
- API to debug and analyze networks
- Save trained networks and load for deployment
- NI's Real-Time target support for deployment
- Ready to run examples for:
  - Image classification
  - Object detection
  - Speech recognition
  - Anomaly detection
  - Time series prediction

*Optional IP for acceleration on NI FPGA based targets

APPLICATIONS

Image Classification

Object Detection

Speech Recognition

Time Series Prediction

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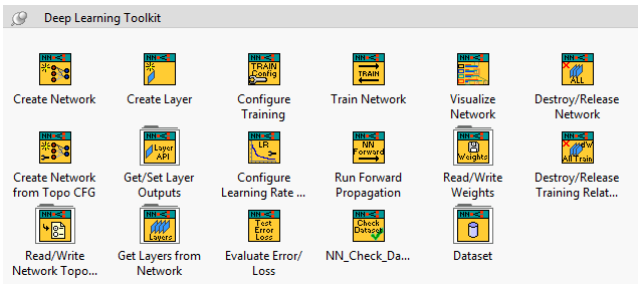
FILLING IN THE GAPS

There are many frameworks for Deep Learning (Caffe, Tensorflow, Theano, Torch) in the market, which are mainly designed for Python and C/C++ programming languages.
DeepView provides possibility to **build, configure, train, evaluate and deploy** deep neural networks in LabVIEW programming environment.

DEVELOPMENT ENVIRONMENT



DeepView is **completely developed in LabVIEW** and does not depend on any external (out of LabVIEW) library or engine for functioning, which makes seamless trained model deployment process on NI embedded targets for inference.

SUPPORTED LAYERS

DeepView supports number of layers required to implement deep neural networks for commonly used applications in the image classification and voice recognition. The common network types supported by toolkit are MLP (Multilayer Perceptron) and CNNs (Convolutional Neural Networks). Supported layers include:

- Input (1D, 3D) with Data Augmentation
- Convolutional
- Upsampling
- Fully Connected or Dense
- Batch Normalization (1D, 3D)
- Pooling (maximum, average)
- Dropout (1D, 3D)
- SoftMax
- Flatten

SYSTEM REQUIREMENTS

DeepView comes as a VIPM (VI Package Manager) installer which includes the toolkit itself, documentation and help, as well as reference examples. Required dependencies will be installed automatically.

System Requirements include:

- LabVIEW 2016 (32-bit and 64-bit) and above
- Windows 7 (x86 and x64) and above
- CUDA and CUDNN toolkits for GPU acceleration

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