



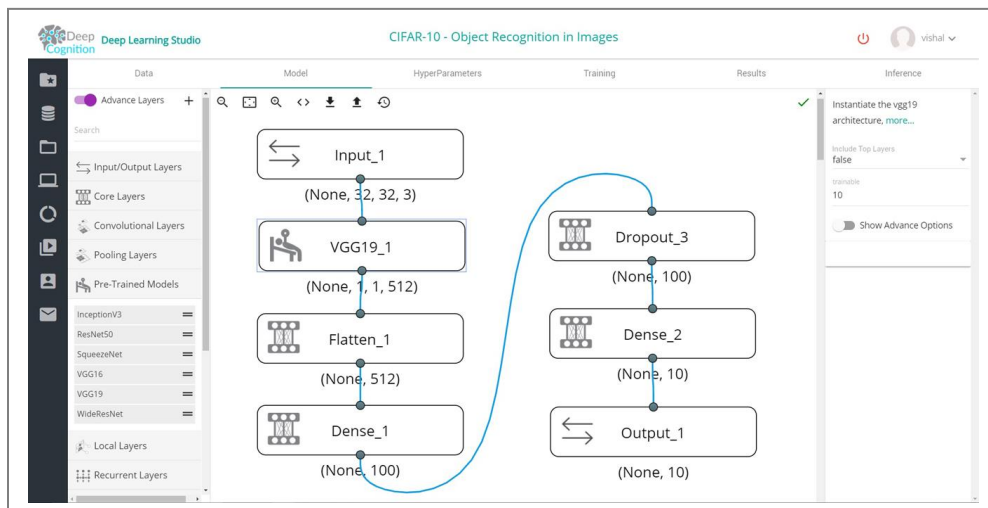
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Key features

- **Simple drag and drop interface** - DLS allows models to be designed and trained using simple drag and drop web based GUI.
- **Transparent multi-GPU training** – DLS allows models to be trained on multiple GPUs (up to 4 GPU) transparently.
- **AutoML** – Integrated AutoML functionality can build model for your dataset automatically.
- **Runs on your desktop or workstation** – Desktop edition runs on your own hardware.
- **Import models from code** – Models designed in Keras can be imported and then edited graphically.
- **Pre-trained networks** – Many pre-trained models are available as blocks in GUI.
- **Training dashboard** – DLS has training dashboard that shows all the key training metrics of deep learning model such as GPU usage etc.
- **Automatic checkpoints** – Models are automatically saved either after each epoch or other criteria chosen by user during training.
- **Training run comparison** – DLS can compare multiple training runs of various

Compatibility – HW/SW

- **OS** – Ubuntu Linux 14.04, 16.04, 16.10, 17.04, 17.10
- **CPU** – Intel/AMD 64 bit CPU
- **GPU** – Any NVIDIA GPU with compute capability more than 3.0 (see <https://developer.nvidia.com/cuda-gpus> to check compute capability)
- **RAM** – 4GB or more recommended

Specifications:

Supported input types	Images, numeric, array, categorical, arbitrary binary data (Numpy encoded files)
Multiple inputs supported	Yes
Train on Multi-GPU	Yes
Input data augmentation	Yes, for example for images shift, resize, rotation for images, normalization etc. is supported
Output types	Arbitrary (including images)
Pre-trained/pre-designed networks	WideResNet, SqueezeNet, ResNet50, Inception V3, VGG16, VGG19
Unsupervised learning	Autoencoders
CNN layers types	Convolution 1D, 2D, 3D, Deconvolution 2D, Atrous Convolution 1D, 2D, SeparableConvolution 2D
Transform layers	Upsampling, ZeroPadding, Cropping for 1D, 2D, 3D
Recurrent layers	Simple RNN, GRU & LSTM
Convolutional recurrent Layers	ConvLSTM2D, ConvRecurrent2D
Advance activations	ELU, LeakyReLU, ParametericSoftPlus, PReLU, SReLU, ThesholdedReLU
Pooling layers	MaxPooling 1D 2D 3D, GlobalAvgPooling 1D 2D 3D, GlobalMaxPooling 1D 2D 3D, AvgPooling 1D 2D 3D
Topology supported	Fully Directed Acyclic Graph with support of Merge (Sum, Mul, Concat, avg, cos, dot, max)
Regularization	All Layers supports Weight Regularization, Activity Regularization, Bias Constraint, Weight constraint, (L1, L2 functions)
Noise and dropout Layers	Dropout, GaussianDropout, GaussianNoise, Spatial Dropout 1D 2D 3D
Other layers	Dense, Reshape, BatchNormalization, Flatten, Highway, Lambda, Masking, MaxoutDense, Permute, TimeDistributedDense, LocallyConnected 1D 2D
Loss functions	mean_squared_error, mean_absolute_error, mean_absolute_percentage_error, mean_squared_logarithmic_error, squared_hinge, hinge, categorical_hinge, logcosh, categorical_crossentropy, sparse_categorical_crossentropy, binary_crossentropy, kullback_leibler_divergence, cosine_proximity
Optimizers	Adadelata, Adagrad, Adam, Adamax, Nadam, RMSprop, SGD
Training dashboard metrics	GPU Load, GPU free memory, CPU load, System Free Memory, Loss, average and batch level accuracy charts for training and validation sets. speed samples/sec. ETA