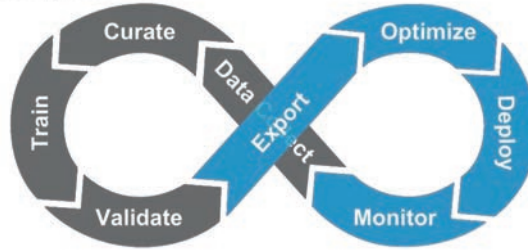
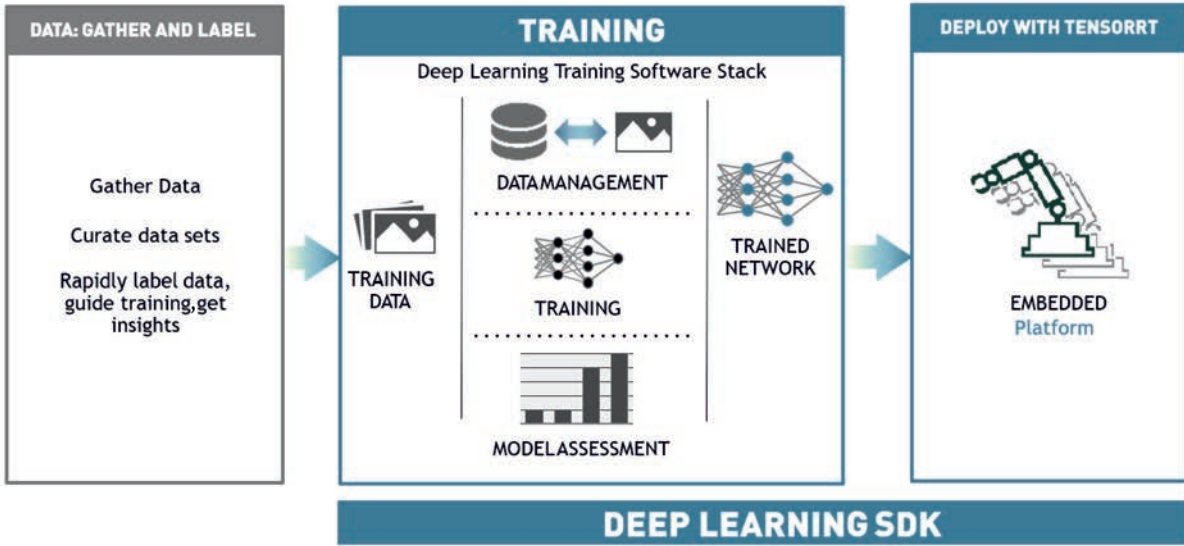


Infrastructure for Deep Learning/AI Lab:



Deep Learning Workflow:



Deep Learning Applications:

COMPUTER VISION

Image Classification, Object Detection

- Object Detection
- Classification
- Segmentation
- Visual Q&A

SPEECH & AUDIO

Voice Recognition, Language Translation

Deep Learning: Recurrent Neural Network

- Automatic Speech Recognition
- Generation
- Processing
- Audio-classification
- Denosing

NATURAL LANGUAGE PROCESSING

Recommendation Engines, Sentiment Analysis

- Neural Machine Translation
- Question & Answer
- Sentiment Analysis
- Search and recommendation engines

Lab Resources:

Deep Learning Machine Setup:

The deep learning machines enabled with GPU card/s along with the required tools, libraries and sample data sets provide the complete platform for training and application development. They are offered in three categories viz. **Silver, Gold and Platinum** classified on the basis of cost & computing power.

Silver

Model:S1

CPU: 8 Core CPU, 32GB RAM
GPU: 16GB,2500+ CUDA Cores
Storage: 1TB HDD, 256GB SSD

Model:S2

CPU: 8 Core CPU, 32GB RAM
GPU: 24GB,4500+ CUDA Cores
Storage: 1TB HDD, 256GB SSD

Gold

Model:G1

CPU: 12 Core CPU, 64GB RAM
GPU: 2x 16GB,2500+ CUDA Cores
Storage: 1TB HDD, 256GB SSD

Model:G2

CPU: 12 Core CPU, 64GB RAM
GPU: 2x 24GB,4500+ CUDA Cores
Storage: 1TB HDD, 256GB SSD

Model:G3*

CPU: 12 Core CPU, 64GB ECC RAM
GPU: 2x 24GB,4500+ CUDA Cores
Storage: 2TB HDD, 256GB SSD

*Model:G3 can be upgraded with 2X CPU, 4X GPU, 128GB ECC RAM

Platinum

Model:P1

CPU: 2x 12 Core CPU,
128GB ECC RAM
GPU: 4x 16GB,2400+ CUDA Cores
Storage: 2TB HDD, 512GB SSD

Model:P2

CPU: 2x 12 Core CPU,
128GB ECC RAM
GPU: 4x 24GB,4500+ CUDA Cores
Storage: 2TB HDD, 512GB SSD

Model:P3

CPU: 2x 16 Core CPU,
256GB ECC RAM
GPU: 2x 16GB with NVLink, 5000+
CUDA Cores
Storage: 2TB HDD, 512GB SSD

For technical and commercial details please mail us on: info@edutechlearning.com



USB Harddisk



SS Drive

Embedded Inference Hardware:

An embedded GPU hardware is provided with the setup which helps the learner to understand the methods of inferring a trained model/network to an embedded platform. This hardware is provided with the customized set of tools, libraries on an external hard drive/SSD.



Workstation chassis



Server chassis

* Images shown are for reference only

Lab Resources:



Caffe



PYTORCH



theano



pandas
 $y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$

Software Libraries:

The setup also contains the following libraries, utilities, tools and SDKs pre installed.

- NVidia AI/Deep learning Software/Libraries
- Tensor Flow
- Caffe, Caffe2
- PyTorch, Torch
- Theano
- Misc: Numpy, Scikit, pandas, other relevant py libs
- Essentials: CUDA, cuDNN, TensorRT
- OS: Ubuntu 14.04 or 16.04 with preinstalled tools
- Datasets: Image Net, CIFAR-10, KITTI pre-loaded for out-of-box development

Online Course:

The proprietary online lab course demonstrates the lab experiments which can be performed using the deep learning setup and help the learner to get started with the learning of concepts related to deep learning.

For more details, Visit:

<https://www.edutechlearning.com/coursedesc/computer-science/lab-courses/deep-learning-lab-course>

Lab Experiments:

The following lab experiment topics are provided along with the complete source code and procedure steps for quick learning and get going with the setup. These experiments are also demonstrated in the online lab course for self paced learning and experimenting.

- Basic Introductory Deep Learning example
- Image Classification with DIGITS
- Object Detection with DIGITS
- Object Detection over KITTI dataset with DIGITS
- Semantic Segmentation using DIGITS
- Medical Image Segmentation using DIGITS
- Signal Processing using DIGITS
- Train a Generative Adversarial Network using DIGITS
- Training an image auto encoder with DIGITS
- Binary Segmentation using DIGITS
- Linear Classification with Tensor Flow
- Image Classification using Tensor Flow
- Demonstration of remote inference of Deep Learning model using Embedded GPU board

Applicable Departments:

Pure Science

- Physics • Chemistry • Maths • Biology

Engineering

- Computer Science • Information technology
- Electronics • Electrical • Mechanical
- Bio-medical

Medical Science

- Radiology • Oncology • Diagnostic

Commerce

- Statistics • Finance • Stock Analysis

Deep Learning Applications Areas:

- Health Care
- Robotics
- Bioinformatics
- Drug discovery and toxicology
- Finance
- Customer relationship management
- Smart cities
- Self Driving
- Recommendation systems
- Astrophysics
- Marketing
- Mobile advertising
- Natural language processing etc...

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Telefax: +91 265 243 8317 • M. : 9408983222
E-mail: info@edutechlearning.com

1st Floor, Paranjape Building,
Opp. Gas Project Office, Jambubet,
Dandia Bazar, Vadodara-390 001.



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