



## **Webinar Topic: - Effective Use of NVIDIA DGX Workstation for AI Based Projects**

**Name of College:** - A. P Shah Institute of Technology, Kasarwadavli,  
Ghodbunder Road, Thane (Maharashtra)

**Department:** - Information Technology

**Date:** - 18/07/2021

**Participants:** - 60

**Targeted Audience:** Students of TE & BE Information Technology

**Speaker:** - Jatin Saini

System Engineer, TCS & Alumini

Jatin works with TCS as System Engineer. Jatin holds good knowledge of NVIDIA DGX Workstation as while student of APSIT final year project and during Hackathon he and his team have utilized NVIDIA Workstation in well manner, on workstation AI, ML, Deep learning related projects can run smoothly with the help of NVIDIA containers and GPUs, which can be useful when one have large data to be processed in very less time. Demonstration of live project on NVIDIA DGX Workstation by Jatin will great help to concerned Students which have AI related projects to be worked on.

### **Faculty Accompanied: -**

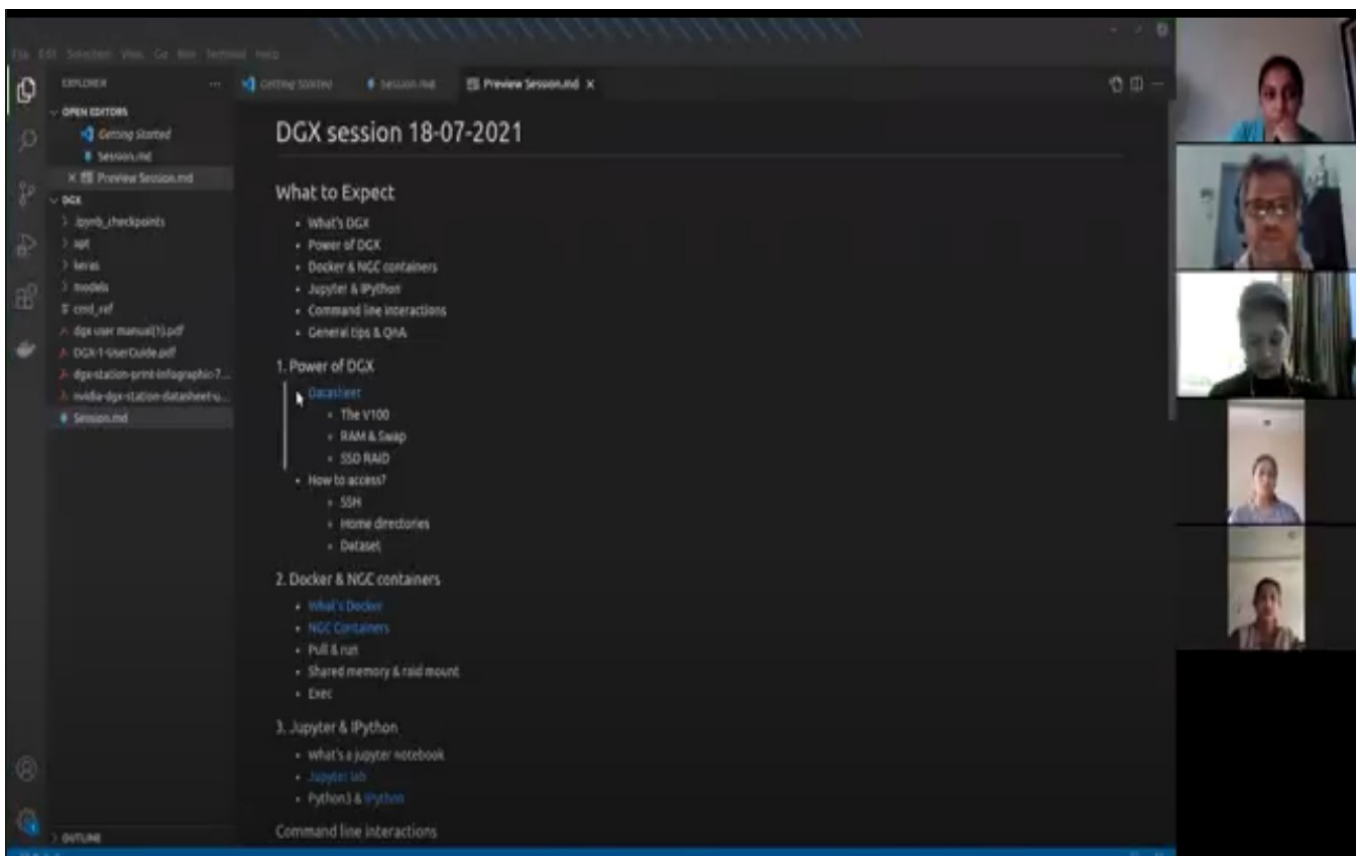
- 1.) Prof. Kiran Deshpande
- 2.) Prof. Neha Deshmukh
- 3.) Prof. Vishal Badgujar
- 4.) Prof. Nahid Shaikh
- 5.) Prof. Kaushiki Upadhyaya
- 6.) Prof. Yamini Patil
- 7.) Prof. Angha Aher
- 8.) Prof. Geetanjali Kalme
- 9.) Prof. Ganesh Gourshete
- 10.) Prof. Vidya Shet
- 11.) Prof. Sonal Jain
- 12.) Ms. Shweta Mahajan



## Aim of webinar: -

This webinar helped students build core knowledge and skills about NVIDIA DGX Workstation which offers Artificial Intelligence, Machine Learning, Deep Learning related projects. Management throughout the NVIDIA container stack helps students to use large data sets to be processed on this workstation with the help of 4 GPUs concurrently which gives output in lessor time. Webinar not only exhibited need of NVIDIA DGX Workstaion Platform but also its adoption with live project demonstration with a containerized applications provided by NVIDIA for accelerating Data Processing in projects.

## Some Screenshots: -





PARSHVANATH CHARITABLE TRUST'S  
**A. P. SHAH INSTITUTE OF TECHNOLOGY**  
(All Branches NBA Accredited)



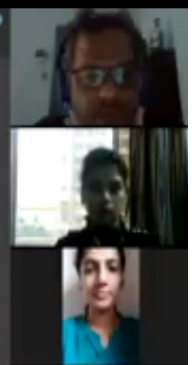
```
File Edit View Search Terminal Help
or: http://127.0.0.1:8888/?token=be483fcb8ebc30684c2e0849f7e5476c218ca77993276
Shutdown this notebook server (y/[n])? y
[11:05:36.966 LabApp] Shutdown confirmed
[11:05:36.966 LabApp] Shutting down 8 kernels
root@M61f67c31c8:/workspace# ipython
Python 3.6.9 [Anaconda, Inc.] (default, Jul 30 2019, 19:07:31)
Type 'copyright', 'credits' or 'license' for more information
IPython 7.12.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]:
1: np.array([1, 2])
2: np.array([1, 2])
Out[1]:
array([1, 2, 3])

In [2]:
Do you really want to exit (y/[n])? y
root@M61f67c31c8:/workspace# python3
Python 3.6.9 [Anaconda, Inc.] (default, Jul 30 2019, 19:07:31)
Type 'help', 'copyright', 'credits' or 'license' for more information.
>>> import numpy as np
>>> def f(x):
...
KeyboardInterrupt
>>>
root@M61f67c31c8:/workspace# ipython
Python 3.6.9 [Anaconda, Inc.] (default, Jul 30 2019, 19:07:31)
Type 'copyright', 'credits' or 'license' for more information
IPython 7.12.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]:
Do you really want to exit (y/[n])? y
root@M61f67c31c8:/workspace# ipython
Python 3.6.9 [Anaconda, Inc.] (default, Jul 30 2019, 19:07:31)
Type 'copyright', 'credits' or 'license' for more information
IPython 7.12.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]:
Do you really want to exit (y/[n])? y
root@M61f67c31c8:/workspace# exit
avidia@psit-DGX-Station:~$ screen -S vggvnx
[detached from 2846].vggvnx
avidia@psit-DGX-Station:~$ screen -ls
There is a screen on:
  2846) vggvnx      (Sunday 18 July 2021 04:40:45 IST)  (Detached)
1 Socket in /run/screen/S-avidia
```



```
File Edit View Search Terminal Help

Datasets={
  ...: AudioDataset(df=df, F1=[...], DATA_DIR=...),
  ...: AudioDataset(val_f=val_f, F1=[...], DATA_DIR=..., is_train=False) for i in range(...),
  ...: AudioDataset(df=df, F1=[...], DATA_DIR=..., is_train=True)}

batch_sizes={
  ...: iB_SIZE,
  ...: 1,
  ...: }

DataLoaders={
  ...: DataLoader(Datasets[...], batch_size=batch_sizes[...], shuffle=True, num_workers=...),
  ...: DataLoader(i, batch_size=batch_sizes[...], shuffle=False, num_workers=...) for i in Datasets[...],
  ...: DataLoader(Datasets[...], batch_size=batch_sizes[...], shuffle=False)}

device = torch.device('cuda' if torch.cuda.is_available() else 'cpu')
torch.device

model=VGGM[...]
optimizer=optim.Adam(model.parameters())
model.to(device)
loss_func=nn.CrossEntropyLoss()

./train.py
@ bash

every 1.0s: nvidia-smi
Sun Jul 18 11:38:29 2021
-----
NVidia-SMI 410.79  Driver Version: 410.79  CUDA Version: 10.2
-----
GPU Name Persistence(M) Bus-Id Disp.A Volatile Secorr. ECC
Fan Temp Perf Pwr:Usage/Cap Memory-Usage GPU-Util Compute M.
-----
0 Tesla V100-DGXS...  On  00000000-07:00:0 Off 0
N/A 40C P0 63W / 300W 0MiB / 32478MiB 0% Default
-----
Processes: GPU Memory
GPU PID Type Process name Usage
-----
No running processes found
-----
027M ./kaggle/birdsong/train_audio/vlwer
246 ./kaggle/birdsong/train_audio
3.8M ./kaggle/birdsong/example_test_audio
466 ./kaggle/birdsong
6.3G ./kaggle/text/ocr-snippets-from-annotated-twitter-images/Images/Images
6.3G ./kaggle/text/ocr-snippets-from-annotated-twitter-images/Images
112M ./kaggle/text/ocr-snippets-from-annotated-twitter-images/database
136 ./kaggle/text/ocr-snippets-from-annotated-twitter-images
15M ./kaggle/text/2018electionmems
317M ./kaggle/text/text-recognition-total-text-dataset/totaltext/Images/Train
102M ./kaggle/text/text-recognition-total-text-dataset/totaltext/Images/Test
419M ./kaggle/text/text-recognition-total-text-dataset/totaltext/Images
419M ./kaggle/text/text-recognition-total-text-dataset/totaltext
5.8M ./kaggle/text/text-recognition-total-text-dataset/TT_new_train_0T/Train
837M ./kaggle/text/text-recognition-total-text-dataset
77M ./kaggle/text/words-mnist/dataset/v811_words_small
77M ./kaggle/text/words-mnist/dataset
627M ./kaggle/text/words-mnist
14G ./kaggle/text
68G ./kaggle
°C
root@5d2087f4d79d:/data#
```

