TRANSFER LEARNING TOOLKIT
INTELLIGENT VIDEO ANALYTICS
RELEASE NOTES

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Release Notes
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TRANSFER LEARNING TOOLKIT FOR INTELLIGENT VIDEO ANALYTICS RELEASE NOTES

Description
NVIDIA Transfer Learning Toolkit (TLT) is a Python package to enable NVIDIA customers the ability to fine-tune pretrained models with customer’s own data and export them for TensorRT based inference through an edge device.

Key Features
Features included in this release:
- Pretrained models for several public architectures and reference applications serving computer vision related object classification and detection Intelligent Video Analytics (IVA) use cases.
- Jupyter notebook examples showing how to use the pretrained models effectively.
- Model adaptation and retraining that is easy to use in heterogeneous multiple GPU environments.
- Pruning API that compresses the size of the model during training.
- Model Export API for integrating the model directly into the DeepStream environment.
- Converter utility to generate a device specific optimized TensorRT engine.
- TLT uses the CUDA MultiProcess Service which helps in optimizing GPU utilization during multiple GPU training.

Contents
Components included in this release:
- TLT docker
- Jupyter notebook with sample workflows
Getting Started Guide containing usage and installation instructions

Software Requirements

- Ubuntu 18.04 LTS
- NVIDIA GPU Cloud account and API key - https://ngc.nvidia.com/
- nvidia-docker 2 installed, instructions: https://github.com/nvidia/nvidia-docker/wiki/Installation-(version-2.0)
- NVIDIA GPU driver v410.xx or above


Hardware Requirements

Minimum

- 4 GB system RAM
- 4 GB of GPU RAM
- Single core CPU
- 1 GPU
- 50 GB of HDD space

Recommended

- 32 GB system RAM
- 32 GB of GPU RAM
- 8 core CPU
- 4 GPUs
- 100 GB of SSD space

Known Issues

1. FasterRCNN currently supports only single GPU training with a batch-size of 1.
2. SSD does not support INT8 export.
3. FasterRCNN supports INT8 export as a Beta feature.

SSD and FasterRCNN integration to DeepStream is a Beta feature and requires custom plugins from the TensorRT Open Source Software (OSS) library. The present release of DeepStream 4.0.1 doesn’t natively support custom plugins from TensorRT OSS. Sample Deepstream apps have been provided here: https://github.com/NVIDIA-AI-IOT/deepstream_4.x_apps.

4. Transfer Learning is not supported on pruned models across all applications.
5. When training with multiple GPUs, you might need to scale down the batch_size and/or scale up the learning rate to get the same accuracy seen in single GPU training.

**Resolved Issues**

There are no resolved issues in this release.
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