

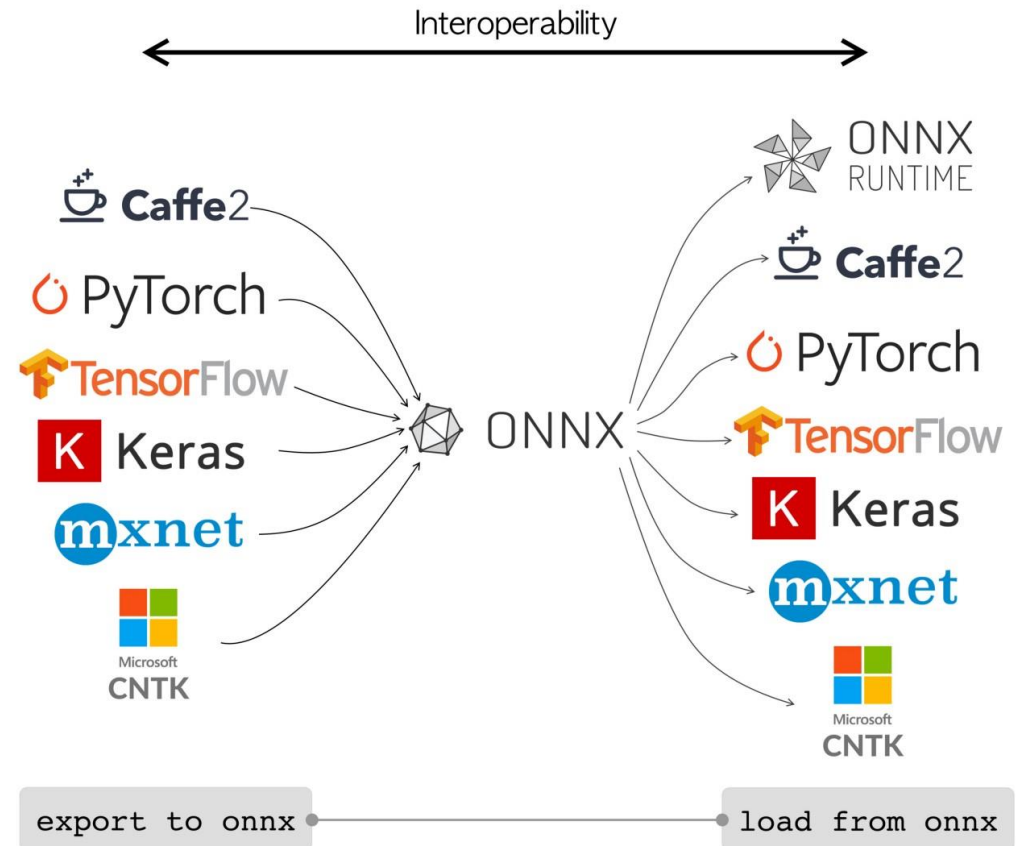
Model

ONNX (Open Neural Network Exchange) is a set of open neural network exchange format, because different frameworks have its advantages, if it is better on a certain framework, you can use that framework to train a neural network, then convert it to onnx or transfer to another framework to execute. The APP provides two models to convert to onnx, from PyTorch models to ONNX models, or from Tensorflow 1.X models to ONNX models.

Version 20230223

Applications

The model converted to onnx can be converted to other model architectures, such as TensorFlow, PyTorch, SciKit-Learn, Keras, Chainer, MXNet, MATLAB, SparkML.



How to use

PyTorch to ONNX :

select PyTorch model -> convert to onnx model

Tensorflow to ONNX :

select Tensorflow model -> convert to onnx model

The screenshot shows a software window titled "LeaderG - Model - Version 7". It contains two main conversion panels, each with a "convert" button. The top panel, titled "PyTorch to ONNX", has a "Parameter" section with the following fields: "PyTorch model name" (yolov4.pth), "PyTorch batch size" (1), "convert gpu id" (0), and "ONNX model name" (yolov4_1_3_608_608.onnx). The bottom panel, titled "Tensorflow to ONNX", has a "Parameter" section with the following fields: "tensorflow model Path" (frozen_inference_graph.pb), "convert gpu id" (0), and "ONNX model Path" (ssd_mobilenet_v1_coco_2018_01_28.onnx). A "Document" button is located at the bottom left of the window.

LeaderG - Model - Version 7

PyTorch to ONNX

Parameter

PyTorch model name

PyTorch batch size

convert gpu id

ONNX model name

Tensorflow to ONNX

Parameter

tensorflow model Path

convert gpu id

ONNX model Path

PyTorch to ONNX

Select the PyTorch model you want to convert, you can enter the file name yourself, or press select to select the model.

You can enter the batch size of the converted onnx model yourself. If you do not fill in, the default value is 1.

You can enter the converted onnx model file name yourself.

Press “convert” to convert the model. The converted model will be placed in the model/onnx folder.

Note:

1. The PyTorch model to be converted must be placed in the model/pytorch folder.
2. The currently supported pytorch model conversion is yolov4's pytorch model conversion to onnx, and yolov4 pytorch must be a darknet architecture.
3. The extension of the selected file only supports .pth files.

The screenshot shows a software window titled "LeaderG - Model - Version 7". Inside, there are two main sections: "PyTorch to ONNX" and "Tensorflow to ONNX".

PyTorch to ONNX Section:

- Parameter:**
 - PyTorch model name: (with "Choose" and "View" buttons)
 - PyTorch batch size:
 - convert gpu id:
 - ONNX model name:
- A "convert" button is highlighted with a red box.

Tensorflow to ONNX Section:

- Parameter:**
 - tensorflow model Path: (with "Choose" and "View" buttons)
 - convert gpu id:
 - ONNX model Path:
- A "convert" button is located at the bottom right of this section.

At the bottom of the window, there is a "Document" button.

PyTorch to ONNX model storage location

The converted onnx model file will be stored in the model/onnx folder.

The screenshot displays the 'PyTorch to ONNX' conversion interface in the LeaderG application. The interface includes a 'Parameter' section with the following fields:

- PyTorch model name: (with 'Choose' and 'View' buttons)
- PyTorch batch size:
- ONNX model name:

A red box highlights the 'convert' button. Below the conversion interface, a terminal window shows the output of the conversion process, including warnings about source code changes for various PyTorch classes. A red arrow points from the 'convert' button to the terminal output.

Simultaneously, a Windows File Explorer window shows the 'onnx' folder, which contains the converted ONNX model file: 'yolov4_1_3_608_608.onnx'. The file is highlighted with a red box, and its size is listed as 251,321 KB.

Name	Date modified	Type	Size
red_mobilenet_v1_2018_01_28.onnx	8/30/2022 3:50 PM	ONNX File	28,620 KB
yolov4_1_3_608_608.onnx	8/26/2022 9:49 AM	ONNX File	251,321 KB

Tensorflow to ONNX

Select the Tensorflow model to be converted, you can enter the file name yourself, or click “Choose” to select the model.

You can enter the converted onnx model file name yourself.

Note:

- The converted Tensorflow model must be placed in tensorflow in the model folder.
- The currently supported Tensorflow model is downloaded from https://github.com/tensorflow/models/blob/master/research/object_detection/g3doc/tf1_detection_zoo.md, which can only support the model trained by tensorflow1.X.
- The extension of the selected file only supports .pb files.

The screenshot shows a software window titled "LeaderG - Model - Version 7" with two main sections for model conversion:

- PyTorch to ONNX:** This section includes a "Parameter" area with the following fields:
 - PyTorch model name: (with "Choose" and "View" buttons)
 - PyTorch batch size:
 - convert gpu id:
 - ONNX model name:A "convert" button is located at the bottom right of this section.
- Tensorflow to ONNX:** This section includes a "Parameter" area with the following fields:
 - tensorflow model Path: (with "Choose" and "View" buttons)
 - convert gpu id:
 - ONNX model Path:A "convert" button is located at the bottom right of this section and is highlighted with a red rectangular border.

At the bottom of the window, there is a "Document" button.

Tensorflow to ONNX model storage location

The converted onnx model file will be stored in the model/onnx folder.

The screenshot shows the LeaderG Model conversion interface with two sections: 'PyTorch to ONNX' and 'Tensorflow to ONNX'. The 'Tensorflow to ONNX' section has a 'convert' button highlighted with a red box. To the right, a terminal window shows the execution of the conversion process, including warnings about deprecated functions and a final message: 'Successfully converted TensorFlow model model/tensorflow/frozen_inference_graph.pb to ONNX' and 'ONNX model is saved at model/onnx/ssd_mobilenet_v1_coco_2018_01_28.onnx'.

PyTorch to ONNX

Parameter

PyTorch model name: yolov4.pth

PyTorch batch size: 1

ONNX model name: yolov4_1_3_608_608.onnx

Tensorflow to ONNX

Parameter

tensorflow model Path: frozen_inference_graph.pb

convert gpu id: 0

ONNX model Path: ssd_mobilenet_v1_coco_2018_01_28.onnx

convert

Document

```
WARNING:tensorflow:From tf2onnx\tf_loader.py:122: convert_variables_to_constants (from tensorflow.python.framework.graph_util_impl) is deprecated and will be removed in a future version.
Instructions for updating:
Use `tf.compat.v1.graph_util.convert_variables_to_constants`
2022-08-26 10:06:30,940 - WARNING - From tf2onnx\tf_loader.py:122: convert_variables_to_constants (from tensorflow.python.framework.graph_util_impl) is deprecated and will be removed in a future version.
Instructions for updating:
Use `tf.compat.v1.graph_util.convert_variables_to_constants`
WARNING:tensorflow:From tensorflow\python\framework\convert_to_constants.py:857: extract_sub_graph (from tensorflow.python.framework.graph_util_impl) is deprecated and will be removed in a future version.
Instructions for updating:
Use `tf.compat.v1.graph_util.extract_sub_graph`
2022-08-26 10:06:30,942 - WARNING - From tensorflow\python\framework\convert_to_constants.py:857: extract_sub_graph (from tensorflow.python.framework.graph_util_impl) is deprecated and will be removed in a future version.
Instructions for updating:
Use `tf.compat.v1.graph_util.extract_sub_graph`
2022-08-26 10:06:33,333 - INFO - Using tensorflow=2.5.0-dev20201128, onnx=1.7.0, tf2onnx=1.6.3/d4abc8
2022-08-26 10:06:33,334 - INFO - Using opset <onnx, 10>
2022-08-26 10:06:36,293 - WARNING - Cannot infer shape for Postprocessor/BatchMultiClassNonMaxSuppression/map/while/PadOrClipBoxList/cond/zeros: Postprocessor/BatchMultiClassNonMaxSuppression/map/while/PadOrClipBoxList/cond/zeros:0
2022-08-26 10:06:54,629 - INFO - Optimizing ONNX model
2022-08-26 10:08:49,436 - INFO - After optimization: Add -22 (325->303), Cast -401 (1366->965), Const -1041 (2713->1672), Gather +7 (554->561), Identity -866 (869->3), Mul -8 (329->321), Reshape -10 (318->308), Shape -1 (112->111), Slice -1 (299->298), Squeeze -10 (671->661), Transpose -98 (292->194), Unsqueeze -142 (449->307)
2022-08-26 10:08:50,463 - INFO - Successfully converted TensorFlow model model/tensorflow/frozen_inference_graph.pb to ONNX
2022-08-26 10:08:50,526 - INFO - ONNX model is saved at model/onnx/ssd_mobilenet_v1_coco_2018_01_28.onnx
Press any key to continue . . .
```

Name	Date modified	Type	Size
ssd_mobilenet_v1_coco_2018_01_28.onnx	8/30/2022 3:50 PM	ONNX File	28,620 KB
yolov4_1_3_608_608.onnx	8/26/2022 9:49 AM	ONNX File	251,321 KB

Reference

- Please refer to the readme.txt in the APP folder.
- LEADERG AppForAI: <https://www.leaderg.com/appforai-windows>
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