TensorFlow API r1.4

tf.contrib.layers.conv3d_transpose

Contents

Aliases:

- `tf.contrib.layers.conv3d_transpose`
- `tf.contrib.layers.convolution3d_transpose`

```
conv3d_transpose(
    inputs,
    num_outputs,
    kernel_size,
    stride=1,
    padding='SAME',
    data_format=DATA_FORMAT_NDHWC,
    activation_fn=tf.nn.relu,
    normalizer_fn=None,
    normalizer_params=None,
    weights_initializer=initializers.xavier_initializer(),
    weights_regularizer=None,
    biases_initializer=tf.zeros_initializer(),
    biases_regularizer=None,
    reuse=None,
    variables_collections=None,
    outputs_collections=None,
    trainable=True,
    scope=None
)
```

Defined in `tensorflow/contrib/layers/python/layers/layers.py`.

Adds a convolution3d_transpose with an optional batch normalization layer.

The function creates a variable called `weights`, representing the kernel, that is convolved with the input. If `batch_norm_params` is `None`, a second variable called 'biases' is added to the result of the operation.

Args:

- `inputs`: A 5-D `Tensor` of type `float` and shape `[batch, depth, height, width, in_channels]` for `NDHWC` data format or `[batch, in_channels, depth, height, width]` for `NCDHW` data format.
- `num_outputs`: Integer, the number of output filters.
- `kernel_size`: A list of length 3 holding the [kernel_depth, kernel_height, kernel_width] of the filters. Can be an int if both values are the same.
- `stride`: A list of length 3: [stride_depth, stride_height, stride_width]. Can be an int if both strides are the same. Note that presently both strides must have the same value.
- `padding`: One of 'VALID' or 'SAME'.
- `data_format`: A string. `NDHWC` (default) and `NCDHW` are supported.
- `activation_fn`: Activation function. The default value is a ReLU function. Explicitly set it to None to skip it and

maintain a linear activation.

- `normalizer_fn`: Normalization function to use instead of **`biases`**. If **`normalizer_fn`** is provided then **`biases_initializer`** and **`biases_regularizer`** are ignored and **`biases`** are not created nor added. default set to None for no normalizer function
- `normalizer_params`: Normalization function parameters.
- `weights_initializer`: An initializer for the weights.
- `weights_regularizer`: Optional regularizer for the weights.
- `biases_initializer`: An initializer for the biases. If None skip biases.
- `biases_regularizer`: Optional regularizer for the biases.
- `reuse`: Whether or not the layer and its variables should be reused. To be able to reuse the layer scope must be given.
- `variables_collections`: Optional list of collections for all the variables or a dictionary containing a different list of collection per variable.
- `outputs_collections`: Collection to add the outputs.
- `trainable`: Whether or not the variables should be trainable or not.
- `scope`: Optional scope for variable_scope.

Returns:

A tensor representing the output of the operation.

Raises:

- `ValueError`: If 'kernel_size' is not a list of length 3.
- `ValueError`: If **`data_format`** is neither **`NDHWC`** nor **`NCDHW`**.
- `ValueError`: If **`C`** dimension of **`inputs`** is None.

Last updated November 2, 2017.