Python\_API\_Guides\_Tensor\_Transformations

目录

[转换 1](#_Toc497310706)

[形状 2](#_Toc497310707)

[切片和拼接 2](#_Toc497310708)

[假量化 3](#_Toc497310709)

# 转换

| **操作** | **描述** |
| --- | --- |
| tf. string\_to\_number(string\_tensor, out\_type=None, name=None) | 将输入Tensor中的每个字符串转换为指定的数据类型。 |
| tf. to\_double(x, name='ToDouble') | 转换为float64 |
| tf. to\_float(x, name='ToFloat') | 转换为float32 |
| tf. to\_ bfloat16(x, name='ToBFloat16') | 转换为bfloat16 |
| tf. to\_int32(x, name='ToInt32') | 转换为Int32 |
| tf. to\_int64(x,name='ToInt64') | 转换为Int64 |
| tf. cast(x, dtype, name=None) | 转换为dtype |
| tf. bitcast(input, type, name=None) | #TODO |
| tf. saturate\_cast(value, dtype, name=None) | #TODO |

# 形状

| **操作** | **描述** |
| --- | --- |
| tf. broadcast\_dynamic\_shape(shape\_x, shape\_y) |  |
| tf. broadcast\_static\_shape(shape\_x, shape\_y) |  |
| tf. shape(input, name=None, out\_type=tf.int32) | 输出input的形状 |
| tf. shape\_n(input, out\_type=None, name=None) | 返回N个1-D整数tensor表示input[i]的形状 |
| tf. size(input, name=None, out\_type=tf.int32) | 返回tensor中的元素个数 |
| tf. rank(input, name=None) | 返回tensor的rank，定义为形状有几个维度 |
| tf. reshape(tensor,shape, name=None) | reshape |
| tf. squeeze(input, axis=None, name=None, squeeze\_dims=None) | 除去(指定的)尺寸为1的维度 |
| tf. expand\_dims(input, axis=None, name=None, dim=None) | 在tensor指定位置插入一个维度 |
| tf. meshgrid(\*args, \*\*kwargs) |  |

# 切片和拼接

| **操作** | **描述** |
| --- | --- |
| tf. slice(input\_,begin, size, name=None) | 从张量提取切片。 |
| tf. strided\_slice(input\_,begin, end, strides=None, begin\_mask=0, end\_mask=0, ellipsis\_mask=0, new\_axis\_mask=0, shrink\_axis\_mask=0, var=None, name=None) | stride切片，要仔细看一下api再用 |
| tf. split(value,num\_or\_size\_splits,axis=0,num=None,name='split') | 输出多个分解的向量 |
| tf. tile(input, multiples, name=None) | [a b c d]=>[a b c d a b c d] |
| tf. pad(tensor, paddings, mode='CONSTANT', name=None, constant\_values=0) | 每一维度输出=pad [D, 0] + tensor.dim\_size(D) + pad [D, 1] |
| tf. concat(values, axis, name='concat') | 以某一维度链接tensor,value是列表 |
| tf. stack(values, axis=0, name='stack') | 纵向排列,value列表中的元素 |
| tf.parallel\_stack (values,name='parallel\_stack') | 👆，但是要求建图时期知道输入形状 |
| tf. unstack(value, num=None, axis=0, name='unstack') | 反向stack |
| tf. reverse\_sequence(input, seq\_lengths, seq\_axis=None, batch\_axis=None,name=None,seq\_dim=None,batch\_dim=None) | #TODO |
| tf. reverse(tensor, axis, name=None) | 沿着第axis轴反转tensor |
| tf. tf.reverse\_v2 | 版本问题的reverse |
| tf. transpose(a, perm=None, name='transpose') | 根据perm转置a |
| tf. extract\_image\_patches(images, ksizes, strides, rates, padding, name=None) | #TODO |
| tf. space\_to\_batch\_nd(input,block\_shape,paddings,name=None) |  |
| tf. |  |
|  |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |
| tf. |  |

# 假量化

| **操作** | **描述** |
| --- | --- |
| tf. is\_finite(x, name=None) | 返回同样大小的bool矩阵 |
| tf. is\_inf(x, name=None) | 返回同样大小的bool矩阵 |
| tf. is\_nan(x, name=None) | 返回同样大小的bool矩阵 |
| tf.verify\_tensor\_all\_finite | 输出一个带有音频的Summary缓冲区 |
| tf. check\_numerics(tensor, message, name=None) | 报告InvalidArgument错误，如果NaN或Inf |
| tf.add\_check\_numerics\_ops() | 连接check\_numerics到每个浮点张量。 |
| tf. Assert(condition,data,summarize=None, name=None) | 如果condition评估为false，打印张量列表data |
| tf. Print(input\_,data,message=None,first\_n=None, summarize=None, name=None) | 打印tensor到标准错误，不兼容jupyter |