

tf.losses.sparse_softmax_cross_entropy

```
sparse_softmax_cross_entropy(  
    labels,  
    logits,  
    weights=1.0,  
    scope=None,  
    loss_collection=tf.GraphKeys.LOSSES,  
    reduction=Reduction.SUM_BY_NONZERO_WEIGHTS  
)
```

Defined in [tensorflow/python/ops/losses/losses_impl.py](#).

Cross-entropy loss using `tf.nn.sparse_softmax_cross_entropy_with_logits`.

weights acts as a coefficient for the loss. If a scalar is provided, then the loss is simply scaled by the given value. If **weights** is a tensor of shape `[batch_size]`, then the loss weights apply to each corresponding sample.

Args:

- labels**: `Tensor` of shape `[d_0, d_1, ..., d_{r-1}]` (where `r` is rank of **labels** and result) and dtype `int32` or `int64`. Each entry in **labels** must be an index in `[0, num_classes)`. Other values will raise an exception when this op is run on CPU, and return `NaN` for corresponding loss and gradient rows on GPU.
- logits**: Unscaled log probabilities of shape `[d_0, d_1, ..., d_{r-1}, num_classes]` and dtype `float32` or `float64`.
- weights**: Coefficients for the loss. This must be scalar or broadcastable to **labels** (i.e. same rank and each dimension is either 1 or the same).
- scope**: the scope for the operations performed in computing the loss.
- loss_collection**: collection to which the loss will be added.
- reduction**: Type of reduction to apply to loss.

Returns:

Weighted loss `Tensor` of the same type as **logits**. If **reduction** is `NONE`, this has the same shape as **labels**; otherwise, it is scalar.

Raises:

- ValueError**: If the shapes of **logits**, **labels**, and **weights** are incompatible, or if any of them are None.

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