TancarFlow

TensorFlow API r1.4

tf.contrib.gan.losses.wargs.mutual\_information\_penalty

```
mutual_information_penalty(
    structured_generator_inputs,
    predicted_distributions,
    weights=1.0,
    scope='generator_modified_loss',
    loss_collection=tf.GraphKeys.LOSSES,
    reduction=losses.Reduction.SUM_BY_NONZERO_WEIGHTS,
    add_summaries=False
)
```

Defined in tensorflow/contrib/gan/python/losses/python/losses\_impl.py.

Returns a penalty on the mutual information in an InfoGAN model.

This loss comes from an InfoGAN paper https://arxiv.org/abs/1606.03657.

## Args:

- structured\_generator\_inputs: A list of Tensors representing the random noise that must have high mutual information with the generator output. List length should match **predicted\_distributions**.
- predicted\_distributions: A list of tf.Distributions. Predicted by the recognizer, and used to evaluate the likelihood of the structured noise. List length should match **structured\_generator\_inputs**.
- weights: Optional Tensor whose rank is either 0, or the same dimensions as structured\_generator\_inputs.
- scope: The scope for the operations performed in computing the loss.
- loss collection: collection to which this loss will be added.
- reduction: A tf.losses.Reduction to apply to loss.
- add\_summaries: Whether or not to add summaries for the loss.

## Returns:

A scalar Tensor representing the mutual information loss.

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