

tf.contrib.gan.losses.wargs.combine_adversarial_loss

```
combine_adversarial_loss(  
    main_loss,  
    adversarial_loss,  
    weight_factor=None,  
    gradient_ratio=None,  
    gradient_ratio_epsilon=1e-06,  
    variables=None,  
    scalar_summaries=True,  
    gradient_summaries=True,  
    scope=None  
)
```

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

Utility to combine main and adversarial losses.

This utility combines the main and adversarial losses in one of two ways. 1) Fixed coefficient on adversarial loss. Use **weight_factor** in this case. 2) Fixed ratio of gradients. Use **gradient_ratio** in this case. This is often used to make sure both losses affect weights roughly equally, as in <https://arxiv.org/pdf/1705.05823>.

One can optionally also visualize the scalar and gradient behavior of the losses.

Args:

- **main_loss** : A floating scalar Tensor indicating the main loss.
- **adversarial_loss** : A floating scalar Tensor indicating the adversarial loss.
- **weight_factor** : If not **None**, the coefficient by which to multiply the adversarial loss. Exactly one of this and **gradient_ratio** must be non-None.
- **gradient_ratio** : If not **None**, the ratio of the magnitude of the gradients. Specifically, $\text{gradient_ratio} = \text{grad_mag}(\text{main_loss}) / \text{grad_mag}(\text{adversarial_loss})$. Exactly one of this and **weight_factor** must be non-None.
- **gradient_ratio_epsilon** : An epsilon to add to the adversarial loss coefficient denominator, to avoid division-by-zero.
- **variables** : List of variables to calculate gradients with respect to. If not present, defaults to all trainable variables.
- **scalar_summaries** : Create scalar summaries of losses.
- **gradient_summaries** : Create gradient summaries of losses.
- **scope** : Optional name scope.

Returns:

A floating scalar Tensor indicating the desired combined loss.

Raises:

- **ValueError** : Malformed input.

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