

## tf.contrib.gan.estimator.GANHead

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Class **GANHead**

## Aliases:

- Class `tf.contrib.gan.estimator.GANHead`
- Class `tf.contrib.gan.estimator.head.GANHead`

Defined in `tensorflow/contrib/gan/python/estimator/python/head_impl.py`.**Head** for a GAN.

## Properties

**logits\_dimension****name**

## Methods

**\_\_init\_\_**

```
__init__(
    generator_loss_fn,
    discriminator_loss_fn,
    generator_optimizer,
    discriminator_optimizer,
    use_loss_summaries=True,
    get_hooks_fn=tfgan_train.get_sequential_train_hooks(),
    name=None
)
```

**Head** for GAN training.

## Args:

- `generator_loss_fn`: A TFGAN loss function for the generator. Takes a `GANModel` and returns a scalar.
- `discriminator_loss_fn`: Same as `generator_loss_fn`, but for the discriminator.

- `generator_optimizer` : The optimizer for generator updates.
- `discriminator_optimizer` : Same as `generator_optimizer` , but for the discriminator updates.
- `use_loss_summaries` : If `True` , add loss summaries. If `False` , does not. If `None` , uses defaults.
- `get_hooks_fn` : A function that takes a GANTrainOps tuple and returns a list of hooks.
- `name` : name of the head. If provided, summary and metrics keys will be suffixed by `"/" + name` .

## create\_estimator\_spec

```
create_estimator_spec(
    features,
    mode,
    logits,
    labels=None,
    train_op_fn=tf.contrib.gan.gan_train_ops
)
```

Returns `EstimatorSpec` that a `model_fn` can return.

See `Head` for more details.

Args:

- `features` : Must be `None` .
- `mode` : Estimator's `ModeKeys` .
- `logits` : A GANModel tuple.
- `labels` : Must be `None` .
- `train_op_fn` : Function that takes a GANModel, GANLoss, generator optimizer, and discriminator optimizer, and returns a `GANTrainOps` tuple. For example, this function can come from TFGAN's `train.py` library, or can be custom.

Returns:

`EstimatorSpec` .

Raises:

- `ValueError` : If `features` isn't `None` .
- `ValueError` : If `train_op_fn` isn't provided in train mode.

## create\_loss

```
create_loss(
    features,
    mode,
    logits,
    labels
)
```

Returns a GANLoss tuple from the provided GANModel.

See `Head` for more details.

## Args:

- `features` : Input `dict` of `Tensor` objects. Unused.
- `mode` : Estimator's `ModeKeys` .
- `logits` : A GANModel tuple.
- `labels` : Must be `None` .

## Returns:

A GANLoss tuple.

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