tf.keras.metrics.RootMeanSquaredError

TensorFlow 1 version (/versions/r1.15/api_docs/python/tf/keras/metrics/RootMeanSquaredError)

View source on GitHub (https://github.com/tensorflow/tensorflow/blob/v2.8.0/tensorflow/python/keras/metrics.py#L2767)

Computes root mean squared error metric between `y_true` and `y_pred`.

Inherits From: `Mean` (https://www.tensorflow.org/api_docs/python/tf/keras/metrics/Mean), `Metric` (https://www.tensorflow.org/api_docs/python/tf/keras/metrics/Metric), `Layer` (https://www.tensorflow.org/api_docs/python/tf/keras/layers/Layer), `Module` (https://www.tensorflow.org/api_docs/python/tf/Module)

View aliases

Main aliases

`tf.metrics.RootMeanSquaredError` (https://www.tensorflow.org/api_docs/python/tf/keras/metrics/RootMeanSquaredError)

Compat aliases for migration

See Migration guide (https://www.tensorflow.org/guide/migrate) for more details.

`tf.compat.v1.keras.metrics.RootMeanSquaredError` (https://www.tensorflow.org/api_docs/python/tf/keras/metrics/RootMeanSquaredError)

```
tf.keras.metrics.RootMeanSquaredError(
    name='root_mean_squared_error', dtype=None
)
```

Used in the notebooks

Used in the tutorials

- Recommending movies: ranking (https://www.tensorflow.org/recommenders/examples/basic_ranking)
- Deep & Cross Network (DCN) (https://www.tensorflow.org/recommenders/examples/dcn)
- Multi-task recommenders (https://www.tensorflow.org/recommenders/examples/multitask)

Standalone usage:

```
>>> m = tf.keras.metrics.RootMeanSquaredError()
>>> m.update_state([[0, 1], [0, 0]], [[1, 1], [0, 0]])
>>> m.result().numpy()
0.5
```

```
>>> m.reset_state()
>>> m.update_state([[0, 1], [0, 0]], [[1, 1], [0, 0]],
...                sample_weight=[1, 0])
>>> m.result().numpy()
0.70710677
```

Usage with `compile()` API:

```
model.compile(
    optimizer='sgd',
    loss='mse',
    metrics=[tf.keras.metrics.RootMeanSquaredError()])
```

Methods

`reset_state`

View source (https://github.com/tensorflow/tensorflow/blob/v2.5.0/tensorflow/python/keras/metrics.py#L247-L260)

```
reset_state()
```

Resets all of the metric state variables.

This function is called between epochs/steps, when a metric is evaluated during training.

`result`

View source (https://github.com/tensorflow/tensorflow/blob/v2.5.0/tensorflow/python/keras/metrics.py#L2766-L2767)

```
result()
```

Computes and returns the metric value tensor.

Result computation is an idempotent operation that simply calculates the metric value using the state variables.

update_state

View source (https://github.com/tensorflow/tensorflow/blob/v2.5.0/tensorflow/python/keras/metrics.py#L2745-L2764)

```
update_state(
    y_true, y_pred, sample_weight=None
)
```

Accumulates root mean squared error statistics.

Args	
`y_true`	The ground truth values.
`y_pred`	The predicted values.
`sample_weight`	Optional weighting of each example. Defaults to 1. Can be a `Tensor` whose rank is either 0, or the same rank as `y_true`, and must be broadcastable to `y_true`.

Returns
Update op.

Last updated 2021-05-14 UTC.