

tf.contrib.distributions.assign_moving_mean_variance

```
assign_moving_mean_variance(  
    mean_var,  
    variance_var,  
    value,  
    decay,  
    name=None  
)
```

Defined in [tensorflow/contrib/distributions/python/ops/moving_stats.py](#).

Compute exponentially weighted moving {mean,variance} of a streaming value.

The **value** updated exponentially weighted moving **mean_var** and **variance_var** are given by the following recurrence relations:

```
variance_var = decay * (variance_var + (1-decay) * (value - mean_var)**2)  
mean_var     = decay * mean_var + (1 - decay) * value
```

★ **Note:** **mean_var** is updated *after* **variance_var**, i.e., **variance_var** uses the lag-1 mean.

For derivation justification, see equation 143 of: T. Finch, Feb 2009. "Incremental calculation of weighted mean and variance". <http://people.ds.cam.ac.uk/fanf2/hermes/doc/antiforgery/stats.pdf>

Args:

- **mean_var**: **float**-like **Variable** representing the exponentially weighted moving mean. Same shape as **variance_var** and **value**.
- **variance_var**: **float**-like **Variable** representing the exponentially weighted moving variance. Same shape as **mean_var** and **value**.
- **value**: **float**-like **Tensor**. Same shape as **mean_var** and **variance_var**.
- **decay**: A **float**-like **Tensor**. The moving mean decay. Typically close to **1.**, e.g., **0.999**.
- **name**: Optional name of the returned operation.

Returns:

- **mean_var**: **Variable** representing the **value**-updated exponentially weighted moving mean.
- **variance_var**: **Variable** representing the **value**-updated exponentially weighted moving variance.

Raises:

- **TypeError**: if **mean_var** does not have float type **dtype**.
- **TypeError**: if **mean_var**, **variance_var**, **value**, **decay** have different **base_dtype**.

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