

tf.keras.backend.batch_normalization

```
batch_normalization(  
    x,  
    mean,  
    var,  
    beta,  
    gamma,  
    epsilon=0.001  
)
```

Defined in [tensorflow/python/keras/_impl/keras/backend.py](#).

Applies batch normalization on x given mean, var, beta and gamma.

I.e. returns: $\text{output} = (x - \text{mean}) / (\text{sqrt}(\text{var}) + \text{epsilon}) * \text{gamma} + \text{beta}$

Arguments:

- **x** : Input tensor or variable.
- **mean** : Mean of batch.
- **var** : Variance of batch.
- **beta** : Tensor with which to center the input.
- **gamma** : Tensor by which to scale the input.
- **epsilon** : Fuzz factor.

Returns:

A tensor.

Except as otherwise noted, the content of this page is licensed under the [Creative Commons Attribution 3.0 License](#), and code samples are licensed under the [Apache 2.0 License](#). For details, see our [Site Policies](#). Java is a registered trademark of Oracle and/or its affiliates.

Last updated November 2, 2017.

Stay Connected

[Blog](#)

[GitHub](#)

[Twitter](#)

Support

[Issue Tracker](#)

[Release Notes](#)

English

[Terms](#) | [Privacy](#)