

[Accelerate](#) /  / BNNS.ReductionLayer Deprecated

Class

BNNS.ReductionLayer Deprecated

A layer object that wraps a reduction filter and manages its deinitialization.

iOS 14.0+ | iPadOS 14.0+ | Mac Catalyst | macOS 11.0+ | tvOS 14.0+ | visionOS | watchOS 7.0+ |

```
class ReductionLayer
```

Deprecated

Use the BNNSGraph API instead.

Topics

Creating a Reduction Layer

```
convenience init?(function: BNNS.ReductionFunction, input: BNNSNDArrayDescriptor, output: BNNSNDArrayDescriptor, weights: BNNSNDArrayDescriptor?, filterParameters: BNNSFilterParameters?)
```

Returns a new reduction layer.

Specifying a Reduction Function

```
enum ReductionFunction
```

Constants that describe reduction functions.

Applying a Reduction Layer

```
func applyBackward(batchSize: Int, input: BNNSNDArrayDescriptor, output: BNNSNDArrayDescriptor, outputGradient: BNNSNDArrayDescriptor, generatingInputGradient: BNNSNDArrayDescriptor, generatingWeightsGradient: BNNSNDArrayDescriptor?) throws
```

Applies the layer backward to generate input gradients.

Directly Applying Reduction

```
static func applyReduction(BNNS.ReductionFunction, input: BNNSNDArrayDescriptor, output: BNNSNDArrayDescriptor, weights: BNNSNDArrayDescriptor?, filterParameters: BNNSFilterParameters?) throws
```

Applies the specified reduction function.

Relationships

Inherits From

BNNS.UnaryLayer

See Also

Reduction layers

```
static func applyReduction(BNNS.ReductionFunction, input: BNNSNDArrayDescriptor, output: BNNSNDArrayDescriptor, weights: BNNSNDArrayDescriptor?, filterParameters: BNNSFilterParameters?) throws
```

Applies the specified reduction function.

struct BNNSReduceFunction

Constants that describe reduction functions.

struct BNNSLayerParametersReduction

A set of parameters that define a reduction layer.

```
func BNNSFilterCreateLayerReduction(UnsafePointer<BNNSLayerParameters> Reduction, UnsafePointer<BNNSFilterParameters>?) -> BNNSFilter?
```

Returns a new reduction layer.

Deprecated

```
func BNNSDirectApplyReduction(UnsafePointer<BNNSLayerParameters> Reduction, UnsafePointer<BNNSFilterParameters>?) -> Int32
```

Applies a reduction operation directly to an input tensor.