Neuron Class Reference

Neuron Class. More...

`#include <neuron.h>`

Public Member Functions

	Neuron () Default constructer.
	Neuron (double *w, double lr, double *inp, double *out, double error, int inpDim, int sampleSize) Create neuron instance and set following parameters. More...
	~Neuron () Destructor.
void	**Configure** (int dim, int sampleSize) Set input dimension and number of samples. More...
void	**setWeights** (double *w) set weights More...
void	**randomWeights** () set weights with random values
void	**setInputs** (double *value) set input vector More...
double *	**getOutputs** () const returns output vector More...
void	**setOutputs** (double *value) set output vector More...
double	**getLr** () const returns learning rate More...
void	**setLr** (double value) set learning rate More...
double *	**getWeights** () const returns current weights More...
void	**perceptronRule** () train neuron with discrete function, The function is bipolar signum
void	**deltaRule** () train neuron with continuous function, The function is bipolar sigmoid

double	**getError** () const returns error rate More...
void	**setError** (double value) set error rate More...
int	**getHowManyCycle** () const returns number of cycles in training More...

Detailed Description

Neuron Class.

Constructor & Destructor Documentation

◆ Neuron()

```
Neuron::Neuron ( double *  w,
                 double    lr,
                 double *  inp,
                 double *  out,
                 double    error,
                 int       inpDim,
                 int       sampleSize
               )
```

Create neuron instance and set following parameters.

Parameters

w	weigth vector
lr	learning rate
inp	input vector
out	output vector, {1,1,-1} 1 and -1 are different classes
error	error rate
inpDim	dimension of inputs
sampleSize	number of samples

Member Function Documentation

◆ Configure()

```
void Neuron::Configure ( int  dim,
                         int  sampleSize
                       )
```

Set input dimension and number of samples.

Parameters

dim	input dimesion
sampleSize	number of samples

◆ getError()

```
double Neuron::getError (  ) const
```

returns error rate

Returns

double

◆ getHowManyCycle()

```
int Neuron::getHowManyCycle (  ) const
```

returns number of cycles in training

Returns

int

◆ getLr()

double Neuron::getLr ( ) const

returns learning rate

Returns
double

◆ getOutputs()

double * Neuron::getOutputs ( ) const

returns output vector

Returns
double

◆ getWeights()

double * Neuron::getWeights ( ) const

returns current weights

Returns
double pointer of weight array

◆ setError()

void Neuron::setError (double value)

set error rate

Parameters
value

◆ setInputs()

void Neuron::setInputs (double * value)

set input vector

Parameters

value pointer of input vector

◆ setLr()

void Neuron::setLr (double value)

set learning rate

Parameters

value

◆ setOutputs()

void Neuron::setOutputs (double * value)

set output vector

Parameters

value pointer of output vector

◆ setWeights()

void Neuron::setWeights (double * w)

set weights

Parameters

w weight vector

The documentation for this class was generated from the following files:

- **neuron.h**

- neuron.cpp
