

# BackPropEngine

INHERITS FROM                      Object  
DECLARED IN                        BackPropEngine.h

## CLASS DESCRIPTION

    This class implements a feed-forward network that updates it's weights using the Error Back-propagation algorithm.

## INSTANCE VARIABLES

<i>Inherited from Object</i>	Class	isa;
<i>Declared in BackPropEngine</i>	id	inputs;
	id	hidden;
	id	outputs;
	float	ETA;
	float	ALPHA;
inputs	a List of the input Neurons	
hidden	a List of the hidden layer Neurons	
outputs	a List of the output Neurons	
ETA	the learning-rate	

ALPHA

the momentum-term (*not used*)

## METHOD TYPES

Initializing a new instance

± init  
± initWithInputs:hidden:outputs:

Running the algorithm

± applyInput:  
± correctWithTarget:

Getting parameters

± inputs  
± hidden  
± outputs

## INSTANCE METHODS

### **applyInput:**

- **applyInput:**(double \*)*input*

Feeds the input vector pointed to by *input* forward through the BP network.

### **correctWithTarget:**

- **correctWithTarget:**(double \*)*target*

Modifies the weights of the BP network by comparing the current output to the target vector *target*. This assumes that you have used the **applyInput:** method to feed-forward an input vector.

See also: - **applyInput:**

## **hidden**

### **- hidden**

Returns a pointer to the receivers list of hidden Neurons.

## **init**

### **- init**

Initializes the receiver. This should not be called directly. Use **initWithInputs:hidden:outputs:** to initialize a new **BackPropEngine**.

See also:  $\pm$  **initWithInputs:hidden:outputs:**

## **initWithInputs:hidden:outputs:**

### **- initWithInputs:(int)*Nin* hidden:(int)*Nhid* outputs:(int)*Nout***

Initializes the receiver creating a feed-forward BP network with *Nin* inputs, *Nhid* hidden nodes and *Nout* outputs.

See also: **- init**

## **inputs**

### **- inputs**

Returns a pointer to the receivers list of input Neurons.

## **outputs**

- **outputs**

Returns a pointer to the receivers list of output Neurons.