

BackPropEngine

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| 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 (<i>not used</i>) | |

METHOD TYPES

| | |
|-----------------------------|----------------------------------------------------|
| Initializing a new instance | \pm init \pm initWithInputs:hidden:outputs: |
| Running the algorithm | \pm applyInput: \pm correctWithTarget: |
| Getting parameters | \pm inputs \pm hidden \pm 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: ± **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.