# AMORE++

pre-alpha (active development aiming to release a beta version this summer (2011) )

Generated by Doxygen 1.7.4

Fri Jul 15 2011 22:09:13

# Contents


**1 The AMORE++ package** **1**

1.1 Introduction . . . . . 1

1.2 Motivation . . . . . 1

1.3 Road Map . . . . . 1

**2 Class Index** **3**

2.1 Class Hierarchy . . . . . 3

**3 Class Index** **5**

3.1 Class List . . . . . 5

**4 File Index** **7**

4.1 File List . . . . . 7

**5 Class Documentation** **9**

5.1 AdaptBehavior Class Reference . . . . . 9

5.1.1 Detailed Description . . . . . 11

5.1.2 Member Function Documentation . . . . . 11

5.1.2.1 adjustParameters . . . . . 11

5.2 ADAPTgd Class Reference . . . . . 12

5.2.1 Detailed Description . . . . . 13

5.2.2 Member Function Documentation . . . . . 13

5.2.2.1 adjustParameters . . . . . 14

5.2.3 Member Data Documentation . . . . . 14

5.2.3.1 outputDerivative . . . . . 14

5.3 ADAPTgdwm Class Reference . . . . . 14

5.3.1 Detailed Description . . . . . 16

5.3.2 Member Function Documentation . . . 16
5.3.2.1 adjustParameters . . . 17
5.3.3 Member Data Documentation . . . 17
5.3.3.1 outputDerivative . . . 17
5.4 BatchBehavior Class Reference . . . 17
5.4.1 Detailed Description . . . 19
5.4.2 Member Function Documentation . . . 19
5.4.2.1 adjustParameters . . . 19
5.5 BATCHgd Class Reference . . . 20
5.5.1 Detailed Description . . . 21
5.5.2 Member Function Documentation . . . 21
5.5.2.1 adjustParameters . . . 22
5.5.3 Member Data Documentation . . . 22
5.5.3.1 outputDerivative . . . 22
5.6 BATCHgdwm Class Reference . . . 22
5.6.1 Detailed Description . . . 24
5.6.2 Member Function Documentation . . . 24
5.6.2.1 adjustParameters . . . 25
5.6.3 Member Data Documentation . . . 25
5.6.3.1 outputDerivative . . . 25
5.7 Con Class Reference . . . 25
5.7.1 Detailed Description . . . 26
5.7.2 Constructor & Destructor Documentation . . . 26
5.7.2.1 Con . . . 26
5.7.2.2 Con . . . 26
5.7.3 Member Function Documentation . . . 26
5.7.3.1 getNeuron . . . 26
5.7.3.2 getWeight . . . 27
5.7.3.3 Id . . . 28
5.7.3.4 setNeuron . . . 29
5.7.3.5 setWeight . . . 29
5.7.3.6 show . . . 29
5.7.3.7 validate . . . 30
5.7.4 Member Data Documentation . . . 31

5.7.4.1 d_neuron . . . 31
5.7.4.2 d_weight . . . 31
5.8 Container< T > Class Template Reference . . . 31
5.8.1 Detailed Description . . . 33
5.8.2 Constructor & Destructor Documentation . . . 33
5.8.2.1 ~Container . . . 33
5.8.2.2 Container . . . 33
5.8.3 Member Function Documentation . . . 33
5.8.3.1 at . . . 33
5.8.3.2 clear . . . 34
5.8.3.3 createIterator . . . 34
5.8.3.4 empty . . . 34
5.8.3.5 push_back . . . 34
5.8.3.6 reserve . . . 34
5.8.3.7 show . . . 34
5.8.3.8 size . . . 34
5.8.3.9 validate . . . 34
5.9 Iterator< T > Class Template Reference . . . 35
5.9.1 Detailed Description . . . 36
5.9.2 Constructor & Destructor Documentation . . . 36
5.9.2.1 ~Iterator . . . 36
5.9.2.2 Iterator . . . 36
5.9.3 Member Function Documentation . . . 36
5.9.3.1 currentItem . . . 36
5.9.3.2 first . . . 36
5.9.3.3 isDone . . . 36
5.9.3.4 next . . . 37
5.10 MLPbehavior Class Reference . . . 37
5.10.1 Detailed Description . . . 39
5.10.2 Member Function Documentation . . . 39
5.10.2.1 predict . . . 39
5.10.3 Member Data Documentation . . . 39
5.10.3.1 d_accumulator . . . 39
5.10.3.2 d_bias . . . 39

5.10.3.3 d_nCons . . . 39
5.10.3.4 d_output . . . 40
5.11 MLPfactory Class Reference . . . 40
5.11.1 Detailed Description . . . 41
5.11.2 Constructor & Destructor Documentation . . . 42
5.11.2.1 MLPfactory . . . 42
5.11.3 Member Function Documentation . . . 42
5.11.3.1 makeCon . . . 42
5.11.3.2 makeCon . . . 42
5.11.3.3 makeConContainer . . . 42
5.11.3.4 makeNeuron . . . 43
5.11.3.5 makeNeuronContainer . . . 43
5.12 NeuralCreator Class Reference . . . 43
5.12.1 Detailed Description . . . 44
5.12.2 Member Function Documentation . . . 44
5.12.2.1 createCon . . . 44
5.12.2.2 createNeuron . . . 45
5.13 NeuralFactory Class Reference . . . 45
5.13.1 Detailed Description . . . 46
5.13.2 Member Function Documentation . . . 46
5.13.2.1 makeCon . . . 46
5.13.2.2 makeCon . . . 46
5.13.2.3 makeConContainer . . . 46
5.13.2.4 makeNeuron . . . 47
5.13.2.5 makeNeuronContainer . . . 47
5.14 Neuron Class Reference . . . 47
5.14.1 Detailed Description . . . 48
5.14.2 Member Function Documentation . . . 48
5.14.2.1 getId . . . 48
5.14.2.2 setId . . . 49
5.14.2.3 show . . . 49
5.14.2.4 validate . . . 49
5.15 PredictBehavior Class Reference . . . 49
5.15.1 Detailed Description . . . 50

5.15.2 Member Function Documentation . . . . . 50
5.15.2.1 predict . . . . . 50
5.16 RBFbehavior Class Reference . . . . . 50
5.16.1 Detailed Description . . . . . 53
5.16.2 Member Function Documentation . . . . . 53
5.16.2.1 predict . . . . . 53
5.16.3 Member Data Documentation . . . . . 53
5.16.3.1 d_accumulator . . . . . 53
5.16.3.2 d_altitude . . . . . 53
5.16.3.3 d_nCons . . . . . 53
5.16.3.4 d_output . . . . . 53
5.16.3.5 d_width . . . . . 54
5.17 RBFfactory Class Reference . . . . . 54
5.17.1 Detailed Description . . . . . 55
5.17.2 Constructor & Destructor Documentation . . . . . 56
5.17.2.1 RBFfactory . . . . . 56
5.17.3 Member Function Documentation . . . . . 56
5.17.3.1 makeCon . . . . . 56
5.17.3.2 makeCon . . . . . 56
5.17.3.3 makeConContainer . . . . . 56
5.17.3.4 makeNeuron . . . . . 56
5.17.3.5 makeNeuronContainer . . . . . 56
5.18 SimpleContainer< T > Class Template Reference . . . . . 56
5.18.1 Detailed Description . . . . . 59
5.18.2 Constructor & Destructor Documentation . . . . . 59
5.18.2.1 SimpleContainer . . . . . 59
5.18.2.2 ~SimpleContainer . . . . . 60
5.18.3 Member Function Documentation . . . . . 60
5.18.3.1 at . . . . . 60
5.18.3.2 clear . . . . . 61
5.18.3.3 createIterator . . . . . 61
5.18.3.4 empty . . . . . 61
5.18.3.5 push_back . . . . . 62
5.18.3.6 reserve . . . . . 62

5.18.3.7 show . . . 62
5.18.3.8 size . . . 63
5.18.3.9 validate . . . 63
5.18.4 Friends And Related Function Documentation . . . 64
5.18.4.1 SimpleContainerIterator< T > . . . 64
5.18.5 Member Data Documentation . . . 64
5.18.5.1 d_collection . . . 64
5.19 SimpleContainerIterator< T > Class Template Reference . . . 64
5.19.1 Detailed Description . . . 67
5.19.2 Constructor & Destructor Documentation . . . 67
5.19.2.1 SimpleContainerIterator . . . 67
5.19.2.2 ~SimpleContainerIterator . . . 67
5.19.3 Member Function Documentation . . . 67
5.19.3.1 currentItem . . . 67
5.19.3.2 first . . . 68
5.19.3.3 isDone . . . 68
5.19.3.4 next . . . 68
5.19.4 Friends And Related Function Documentation . . . 69
5.19.4.1 SimpleContainer< T > . . . 69
5.19.5 Member Data Documentation . . . 69
5.19.5.1 d_container . . . 69
5.19.5.2 d_current . . . 69
5.20 SimpleNeuralCreator Class Reference . . . 69
5.20.1 Detailed Description . . . 71
5.20.2 Constructor & Destructor Documentation . . . 71
5.20.2.1 SimpleNeuralCreator . . . 71
5.20.3 Member Function Documentation . . . 72
5.20.3.1 createCon . . . 72
5.20.3.2 createNeuron . . . 72
5.21 SimpleNeuron Class Reference . . . 73
5.21.1 Detailed Description . . . 74
5.21.2 Constructor & Destructor Documentation . . . 75
5.21.2.1 SimpleNeuron . . . 75
5.21.3 Member Function Documentation . . . 75

5.21.3.1 getId . . . 75
5.21.3.2 setId . . . 75
5.21.3.3 show . . . 76
5.21.3.4 validate . . . 76
5.21.4 Member Data Documentation . . . 77
5.21.4.1 d_Id . . . 77
5.22 TrainingBehavior Class Reference . . . 77
5.22.1 Detailed Description . . . 78
5.22.2 Member Function Documentation . . . 78
5.22.2.1 adjustParameters . . . 78

**6 File Documentation** **79**

6.1 pkg/AMORE/src/AMORE.h File Reference . . . 79
6.1.1 Define Documentation . . . 80
6.1.1.1 foreach . . . 80
6.1.1.2 size_type . . . 81
6.1.2 Typedef Documentation . . . 81
6.1.2.1 ConContainerPtr . . . 81
6.1.2.2 ConIteratorPtr . . . 81
6.1.2.3 ConPtr . . . 81
6.1.2.4 Handler . . . 81
6.1.2.5 NeuralCreatorPtr . . . 81
6.1.2.6 NeuralFactoryPtr . . . 81
6.1.2.7 NeuronContainerPtr . . . 81
6.1.2.8 NeuronIteratorPtr . . . 81
6.1.2.9 NeuronPtr . . . 81
6.1.2.10 NeuronRef . . . 82
6.1.2.11 PredictBehaviorRef . . . 82
6.1.2.12 TrainingBehaviorRef . . . 82
6.2 pkg/AMORE/src/Con.cpp File Reference . . . 82
6.3 pkg/AMORE/src/Container.cpp File Reference . . . 83
6.4 pkg/AMORE/src/dia/AdaptBehavior.h File Reference . . . 84
6.5 pkg/AMORE/src/dia/ADAPTgd.h File Reference . . . 85
6.6 pkg/AMORE/src/dia/ADAPTgdwm.h File Reference . . . 86

6.7 pkg/AMORE/src/dia/BatchBehavior.h File Reference . . . . . 86
6.8 pkg/AMORE/src/dia/BATCHgd.h File Reference . . . . . 87
6.9 pkg/AMORE/src/dia/BATCHgdwm.h File Reference . . . . . 88
6.10 pkg/AMORE/src/dia/Con.h File Reference . . . . . 90
6.11 pkg/AMORE/src/dia/Container.h File Reference . . . . . 90
6.12 pkg/AMORE/src/dia/Iterator.h File Reference . . . . . 91
6.13 pkg/AMORE/src/dia/MLPbehavior.h File Reference . . . . . 91
6.14 pkg/AMORE/src/dia/MLPfactory.h File Reference . . . . . 92
6.15 pkg/AMORE/src/dia/NeuralCreator.h File Reference . . . . . 94
6.16 pkg/AMORE/src/dia/NeuralFactory.h File Reference . . . . . 95
6.17 pkg/AMORE/src/dia/Neuron.h File Reference . . . . . 96
6.18 pkg/AMORE/src/dia/PredictBehavior.h File Reference . . . . . 97
6.19 pkg/AMORE/src/dia/RBFbehavior.h File Reference . . . . . 97
6.20 pkg/AMORE/src/dia/RBFfactory.h File Reference . . . . . 98
6.21 pkg/AMORE/src/dia/SimpleContainer.h File Reference . . . . . 98
6.22 pkg/AMORE/src/dia/SimpleContainerIterator.h File Reference . . . . . 99
6.23 pkg/AMORE/src/dia/SimpleNeuralCreator.h File Reference . . . . . 100
6.24 pkg/AMORE/src/dia/SimpleNeuron.h File Reference . . . . . 101
6.25 pkg/AMORE/src/dia/TrainingBehavior.h File Reference . . . . . 103
6.26 pkg/AMORE/src/Iterator.cpp File Reference . . . . . 103
6.27 pkg/AMORE/src/MLPfactory.cpp File Reference . . . . . 104
6.28 pkg/AMORE/src/SimpleContainer.cpp File Reference . . . . . 105
6.29 pkg/AMORE/src/SimpleContainerIterator.cpp File Reference . . . . . 106
6.30 pkg/AMORE/src/SimpleNeuralCreator.cpp File Reference . . . . . 107
6.31 pkg/AMORE/src/SimpleNeuron.cpp File Reference . . . . . 108

# Chapter 1

# The AMORE++ package

## 1.1 Introduction

Here you will find the documentation of the C++ component of the AMORE++ R package.

The AMORE++ package is a new version of the publicly available AMORE package for neural network training and simulation under R

## 1.2 Motivation

Since the release of the previous version of the AMORE many things have changed in the R programming world.

The advent of the Reference Classes and of packages like Rcpp, inline and RUnit compel us to write a better version of the package in order to provide a more useful framework for neural network training and simulation.

## 1.3 Road Map

This project is currently very active and the development team intends to provide a beta version as soon as this summer (2011)

# Chapter 2

# Class Index

## 2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:


- Con . . . 25
- Container< T > . . . 31
  - SimpleContainer< T > . . . 56
- Iterator< T > . . . 35
  - SimpleContainerIterator< T > . . . 64
- NeuralCreator . . . 43
  - SimpleNeuralCreator . . . 69
- NeuralFactory . . . 45
  - MLPfactory . . . 40
  - RBFfactory . . . 54
- Neuron . . . 47
  - SimpleNeuron . . . 73
- PredictBehavior . . . 49
  - MLPbehavior . . . 37
  - RBFbehavior . . . 50
- TrainingBehavior . . . 77
  - AdaptBehavior . . . 9
    - ADAPTgd . . . 12
    - ADAPTgdwm . . . 14
  - BatchBehavior . . . 17
    - BATCHgd . . . 20
    - BATCHgdwm . . . 22

# Chapter 3

# Class Index

## 3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:


AdaptBehavior (Class AdaptBehavior - ) . . . . . 9
ADAPTgd (Class ADAPTgd - ) . . . . . 12
ADAPTgdwm (Class ADAPTgdwm - ) . . . . . 14
BatchBehavior (Class BatchBehavior - ) . . . . . 17
BATCHgd (Class BATCHgd - ) . . . . . 20
BATCHgdwm (Class BATCHgdwm - ) . . . . . 22
Con (Class Con - ) . . . . . 25
Container< T > (Class Container - ) . . . . . 31
Iterator< T > (Class Iterator - ) . . . . . 35
MLPbehavior (Class MLPbehavior - ) . . . . . 37
MLPfactory (Class MLPfactory - ) . . . . . 40
NeuralCreator (Class NeuralCreator - ) . . . . . 43
NeuralFactory (Class NeuralFactory - ) . . . . . 45
Neuron (Class Neuron - ) . . . . . 47
PredictBehavior (Class PredictBehavior - ) . . . . . 49
RBFbehavior (Class RBFbehavior - ) . . . . . 50
RBFfactory (Class RBFfactory - ) . . . . . 54
SimpleContainer< T > (Class SimpleContainer - ) . . . . . 56
SimpleContainerIterator< T > (Class SimpleContainerIterator - ) . . . . . 64
SimpleNeuralCreator (Class SimpleNeuralCreator - ) . . . . . 69
SimpleNeuron (Class SimpleNeuron - ) . . . . . 73
TrainingBehavior (Class TrainingBehavior - ) . . . . . 77

# Chapter 4

# File Index

## 4.1 File List

Here is a list of all files with brief descriptions:


pkg/AMORE/src/AMORE.h . . . 79
pkg/AMORE/src/Con.cpp . . . 82
pkg/AMORE/src/Container.cpp . . . 83
pkg/AMORE/src/Iterator.cpp . . . 103
pkg/AMORE/src/MLPfactory.cpp . . . 104
pkg/AMORE/src/SimpleContainer.cpp . . . 105
pkg/AMORE/src/SimpleContainerIterator.cpp . . . 106
pkg/AMORE/src/SimpleNeuralCreator.cpp . . . 107
pkg/AMORE/src/SimpleNeuron.cpp . . . 108
pkg/AMORE/src/dia/AdaptBehavior.h . . . 84
pkg/AMORE/src/dia/ADAPTgd.h . . . 85
pkg/AMORE/src/dia/ADAPTgdwm.h . . . 86
pkg/AMORE/src/dia/BatchBehavior.h . . . 86
pkg/AMORE/src/dia/BATCHgd.h . . . 87
pkg/AMORE/src/dia/BATCHgdwm.h . . . 88
pkg/AMORE/src/dia/Con.h . . . 90
pkg/AMORE/src/dia/Container.h . . . 90
pkg/AMORE/src/dia/Iterator.h . . . 91
pkg/AMORE/src/dia/MLPbehavior.h . . . 91
pkg/AMORE/src/dia/MLPfactory.h . . . 92
pkg/AMORE/src/dia/NeuralCreator.h . . . 94
pkg/AMORE/src/dia/NeuralFactory.h . . . 95
pkg/AMORE/src/dia/Neuron.h . . . 96
pkg/AMORE/src/dia/PredictBehavior.h . . . 97
pkg/AMORE/src/dia/RBFbehavior.h . . . 97
pkg/AMORE/src/dia/RBFfactory.h . . . 98
pkg/AMORE/src/dia/SimpleContainer.h . . . 98
pkg/AMORE/src/dia/SimpleContainerIterator.h . . . 99
pkg/AMORE/src/dia/SimpleNeuralCreator.h . . . 100

pkg/AMORE/src/dia/SimpleNeuron.h . . . . . 101
pkg/AMORE/src/dia/TrainingBehavior.h . . . . . 103

# Chapter 5

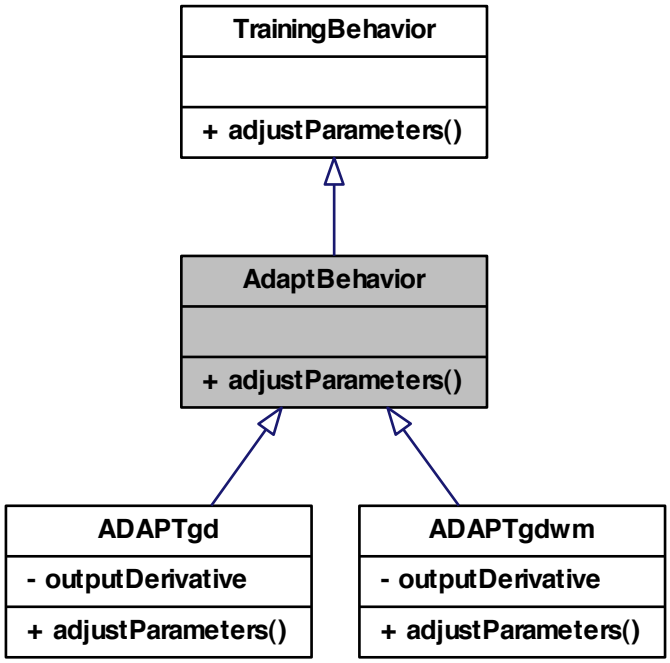
# Class Documentation

## 5.1 AdaptBehavior Class Reference

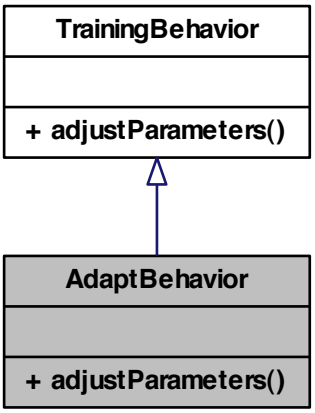
class AdaptBehavior -

`#include <AdaptBehavior.h>`

Inheritance diagram for AdaptBehavior:



Collaboration diagram for AdaptBehavior:




### Public Member Functions

- virtual void adjustParameters ()=0

### 5.1.1 Detailed Description

class AdaptBehavior -

Definition at line 5 of file AdaptBehavior.h.

### 5.1.2 Member Function Documentation

#### 5.1.2.1 virtual void AdaptBehavior::adjustParameters ( ) [pure virtual]

Reimplemented from TrainingBehavior.

Implemented in ADAPTgd, and ADAPTgdwm.

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

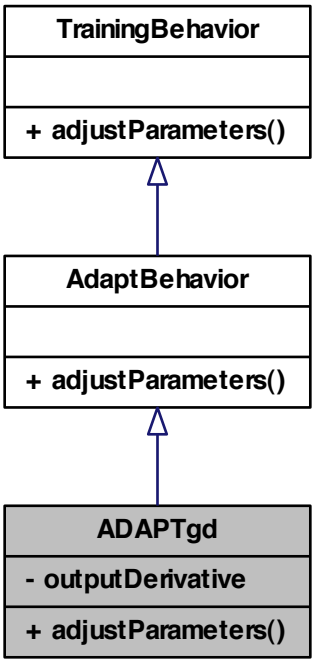
- pkg/AMORE/src/dia/AdaptBehavior.h

## 5.2 ADAPTgd Class Reference

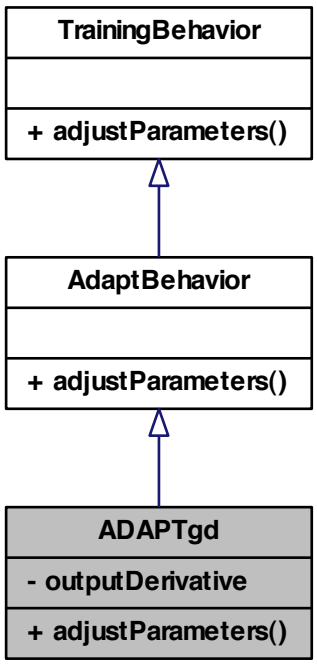
class ADAPTgd -

`#include <ADAPTgd.h>`

Inheritance diagram for ADAPTgd:



Collaboration diagram for ADAPTgd:




### Public Member Functions

- void adjustParameters ()

### Private Attributes

- double outputDerivative

### 5.2.1 Detailed Description

class ADAPTgd -

Definition at line 5 of file ADAPTgd.h.

### 5.2.2 Member Function Documentation

#### 5.2.2.1 void ADAPTgd::adjustParameters ( ) [virtual]

Implements AdaptBehavior.

### 5.2.3 Member Data Documentation

#### 5.2.3.1 double ADAPTgd::outputDerivative [private]

Definition at line 8 of file ADAPTgd.h.

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

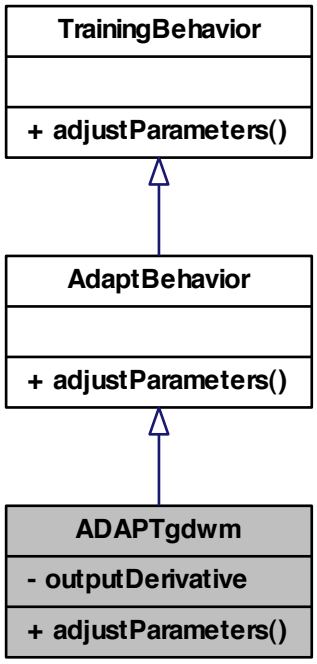
- pkg/AMORE/src/dia/ADAPTgd.h

## 5.3 ADAPTgdwm Class Reference

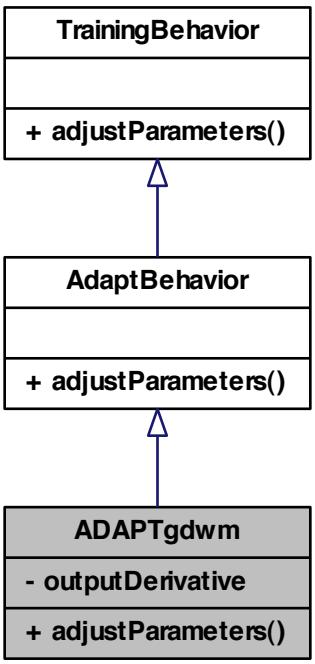
class ADAPTgdwm -

`#include <ADAPTgdwm.h>`

Inheritance diagram for ADAPTgdwm:



Collaboration diagram for ADAPTgdwm:




### Public Member Functions

- void adjustParameters ()

### Private Attributes

- double outputDerivative

### 5.3.1 Detailed Description

class ADAPTgdwm -

Definition at line 5 of file ADAPTgdwm.h.

### 5.3.2 Member Function Documentation

#### 5.3.2.1 void ADAPTgdwm::adjustParameters ( ) [virtual]

Implements AdaptBehavior.

### 5.3.3 Member Data Documentation

#### 5.3.3.1 double ADAPTgdwm::outputDerivative [private]

Definition at line 8 of file ADAPTgdwm.h.

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

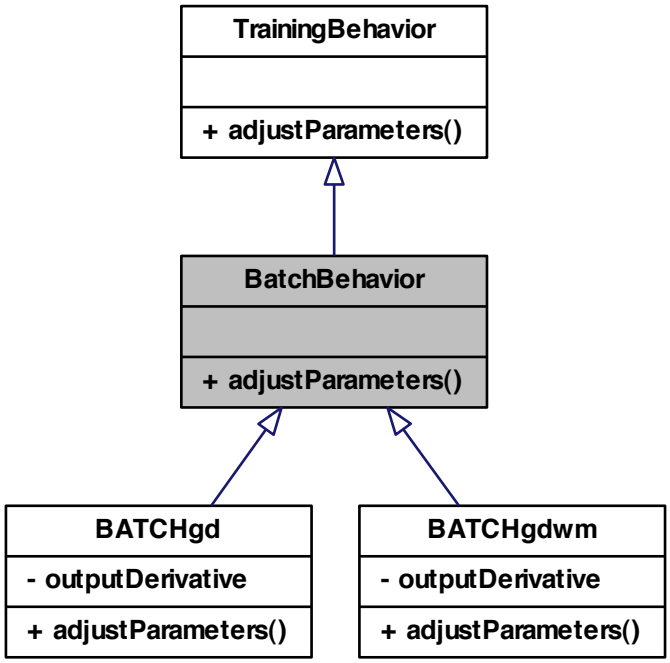
- pkg/AMORE/src/dia/ADAPTgdwm.h

## 5.4 BatchBehavior Class Reference

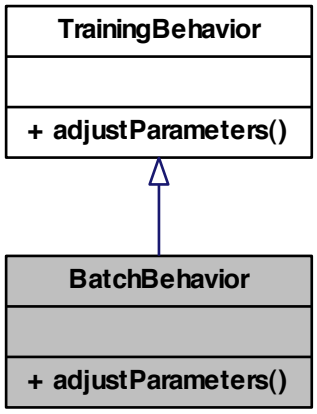
class BatchBehavior -

`#include <BatchBehavior.h>`

Inheritance diagram for BatchBehavior:



Collaboration diagram for BatchBehavior:




### Public Member Functions

- virtual void adjustParameters ()=0

## 5.4.1 Detailed Description

class BatchBehavior -

Definition at line 5 of file BatchBehavior.h.

## 5.4.2 Member Function Documentation

#### 5.4.2.1 virtual void BatchBehavior::adjustParameters ( ) [pure virtual]

Reimplemented from TrainingBehavior.

Implemented in BATCHgd, and BATCHgdwm.

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

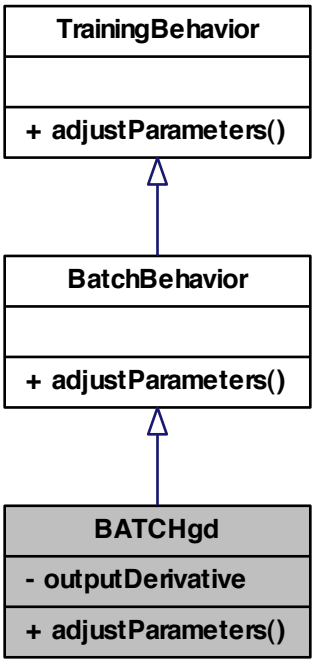
- pkg/AMORE/src/dia/BatchBehavior.h

## 5.5 BATCHgd Class Reference

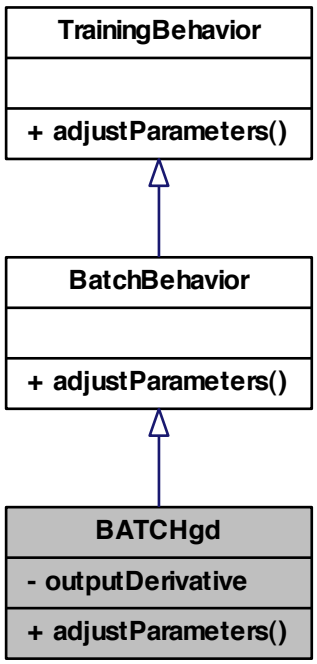
class BATCHgd -

`#include <BATCHgd.h>`

Inheritance diagram for BATCHgd:



Collaboration diagram for BATCHgd:




### Public Member Functions

- void adjustParameters ()

### Private Attributes

- double outputDerivative

### 5.5.1 Detailed Description

class BATCHgd -

Definition at line 5 of file BATCHgd.h.

### 5.5.2 Member Function Documentation

#### 5.5.2.1 void BATCHgd::adjustParameters ( ) [virtual]

Implements BatchBehavior.

### 5.5.3 Member Data Documentation

#### 5.5.3.1 double BATCHgd::outputDerivative [private]

Definition at line 8 of file BATCHgd.h.

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

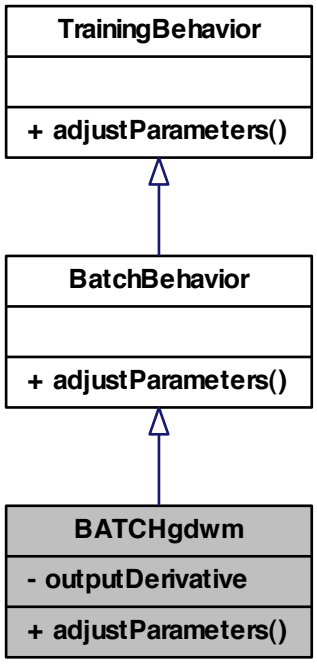
- pkg/AMORE/src/dia/BATCHgd.h

## 5.6 BATCHgdwm Class Reference

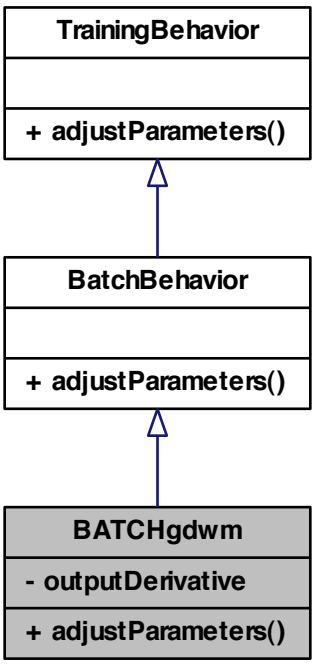
class BATCHgdwm -

`#include <BATCHgdwm.h>`

Inheritance diagram for BATCHgdwm:



Collaboration diagram for BATCHgdwm:




### Public Member Functions

- void adjustParameters ()

### Private Attributes

- double outputDerivative

### 5.6.1 Detailed Description

class BATCHgdwm -

Definition at line 5 of file BATCHgdwm.h.

### 5.6.2 Member Function Documentation

#### 5.6.2.1 void BATCHgdwm::adjustParameters ( ) [virtual]

Implements BatchBehavior.

### 5.6.3 Member Data Documentation

#### 5.6.3.1 double BATCHgdwm::outputDerivative [private]

Definition at line 8 of file BATCHgdwm.h.

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

- pkg/AMORE/src/dia/BATCHgdwm.h

## 5.7 Con Class Reference

class Con -

`#include <Con.h>`

### Public Member Functions

- Con (Neuron &neuron)

  *Constructor.*
- Con (Neuron &neuron, double weight)

  *Constructor.*
- Handler Id ()

  *A getter of the Id of the Neuron pointed by the from field.*
- Neuron & getNeuron ()

  *from field accessor.*
- void setNeuron (Neuron &neuron)
- double getWeight ()

  *weight field accessor.*
- void setWeight (double weight)
- void show ()

  *Pretty print of the Con information.*
- bool validate ()

  *Object validator.*

### Private Attributes

- NeuronRef d_neuron
- double d_weight

### 5.7.1 Detailed Description

class Con -

Definition at line 3 of file Con.h.

### 5.7.2 Constructor & Destructor Documentation

#### 5.7.2.1 Con::Con ( Neuron & *neuron* )

Constructor.

Definition at line 19 of file Con.cpp.

```
                        :
  d_neuron( boost::ref(neuron) ), d_weight(0)
{
}
```

#### 5.7.2.2 Con::Con ( Neuron & *neuron,* double *weight* )

Constructor.

Definition at line 30 of file Con.cpp.

```
                                        :
  d_neuron(boost::ref(neuron)), d_weight(weight)
{
}
```

### 5.7.3 Member Function Documentation

#### 5.7.3.1 Neuron & Con::getNeuron ( )

from field accessor.

This method allows access to the address stored in the private from field (a pointer to a Neuron object).∗

**Returns**

A pointer to the Neuron object referred to by the from field.

```
    //================
    //Usage example:
    //================
    // Data set up
                    NeuronPtr ptShNeuron ( new Neuron(1) );         // Neuron
  Id is set 1
                    ConPtr ptShCon( new Con(ptShNeuron) );          // from p
  oints to ptShNeuron and weight is set to 0
```

```
        // Test
                        ptShNeuron = ptShCon->getFrom() ;
                        int result = ptShNeuron->getId();

        // Now, result is equal to 1.
```

**See also**

getId and the unit test files, e.g., runit.Cpp.Con.R, for further examples.

Definition at line 56 of file Con.cpp.

References d_neuron.

```
{
  return d_neuron;
}
```

#### 5.7.3.2 double Con::getWeight ( )

weight field accessor.

This method allows access to the value stored in the private field weight

**Returns**

The value of weight (double)

```
  //================
  //Usage example:
  //================
  // Data set up
                        std::vector<double> result;
                        NeuronPtr ptShNeuron ( new Neuron(16) );                /
      / Neuron Id is set to 16
                        ConPtr ptShCon( new Con(ptShNeuron, 12.4) );  // from poi
      nts to ptShNeuron and weight is set to 12.4
        // Test
                        result.push_back( ptShCon->getWeight() );
                        ptShCon->setWeight(2.2);
                        result.push_back( ptShCon->getWeight() );

        // Now, result is a numeric vector that contains the values 12.4 and 2.2
      .
```

**See also**

setWeight and the unit test files, e.g., runit.Cpp.Con.R, for further examples.

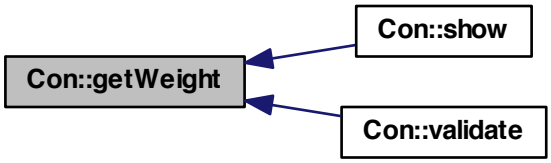
Definition at line 116 of file Con.cpp.

References d_weight.

Referenced by show(), and validate().

```
{
  return d_weight;
}
```

Here is the caller graph for this function:




#### 5.7.3.3 int Con::Id ( )

A getter of the Id of the Neuron pointed by the from field.

This method gets the Id of the Neuron referred to by the from field

**Returns**

The value of the Id (an integer).

```
//================
//Usage example:
//================
// Data set up
                NeuronPtr ptShNeuron ( new Neuron(16) );        // Neuron I
d is set to 16
                ConPtr ptShCon( new Con(ptShNeuron) );          // from poi
nts to ptShNeuron and weight is set to 0
// Test
                int result = ptShCon->getId();

// Now, result is equal to 16.
```

**See also**

getFrom, setFrom and the unit test files, e.g., runit.Cpp.Con.R, for further examples.

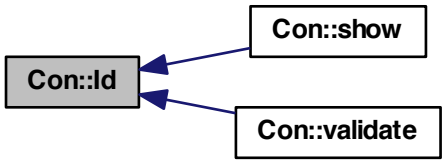
Definition at line 88 of file Con.cpp.

References d_neuron.

Referenced by show(), and validate().

```
{
  return d_neuron.get().getId();
}
```

Here is the caller graph for this function:




#### 5.7.3.4 void Con::setNeuron ( Neuron & *neuron* )

Definition at line 63 of file Con.cpp.

References d_neuron.

```
{
  d_neuron=boost::ref(neuron);
}
```

#### 5.7.3.5 void Con::setWeight ( double *weight* )

Definition at line 123 of file Con.cpp.

References d_weight.

```
{
  d_weight=weight;
}
```

#### 5.7.3.6 void Con::show ( )

Pretty print of the Con information.

This method outputs in the R terminal the contents of the Con fields.

**Returns**

true in case everything works without throwing an exception

**See also**

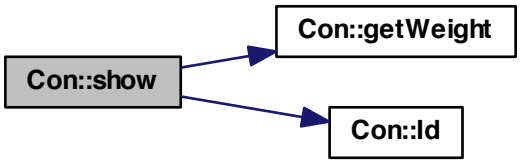
setWeight and the unit test files, e.g., runit.Cpp.Con.R, for usage examples.

Definition at line 135 of file Con.cpp.

References getWeight(), and Id().

```
{
  int id = Id();
  if (id == NA_INTEGER)
    {
      Rprintf("From: NA\t Invalid Connection \n");
    }
  else
    {
      Rprintf("From:\t %d \t Weight= \t %lf \n", id , getWeight() );
    }
}
```

Here is the call graph for this function:




#### 5.7.3.7 bool Con::validate ( )

Object validator.

This method checks the object for internal coherence. A try / catch mechanism exits normal execution and returns control to the R terminal in case the contents of the Con object are identified as corrupted.

**Returns**

true in case the checks are Ok.

**Exceptions**

| | |
|---|---|
| *An* | std::range error if weight or from are not finite. |

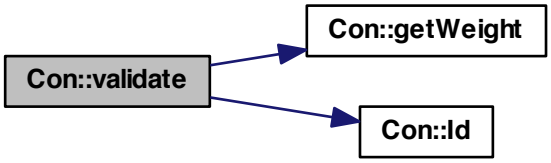
Definition at line 155 of file Con.cpp.

References getWeight(), and Id().

```
{
```

```
  BEGIN_RCPP
  if (! R_FINITE(getWeight()) ) throw std::range_error("weight is not finite.");
  if (Id() == NA_INTEGER)
    throw std::range_error("fromId is not finite.");
  return (true);
END_RCPP}
```

Here is the call graph for this function:




### 5.7.4 Member Data Documentation

#### 5.7.4.1 NeuronRef Con::d_neuron [private]

Definition at line 6 of file Con.h.

Referenced by getNeuron(), Id(), and setNeuron().

#### 5.7.4.2 double Con::d_weight [private]

Definition at line 7 of file Con.h.

Referenced by getWeight(), and setWeight().

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

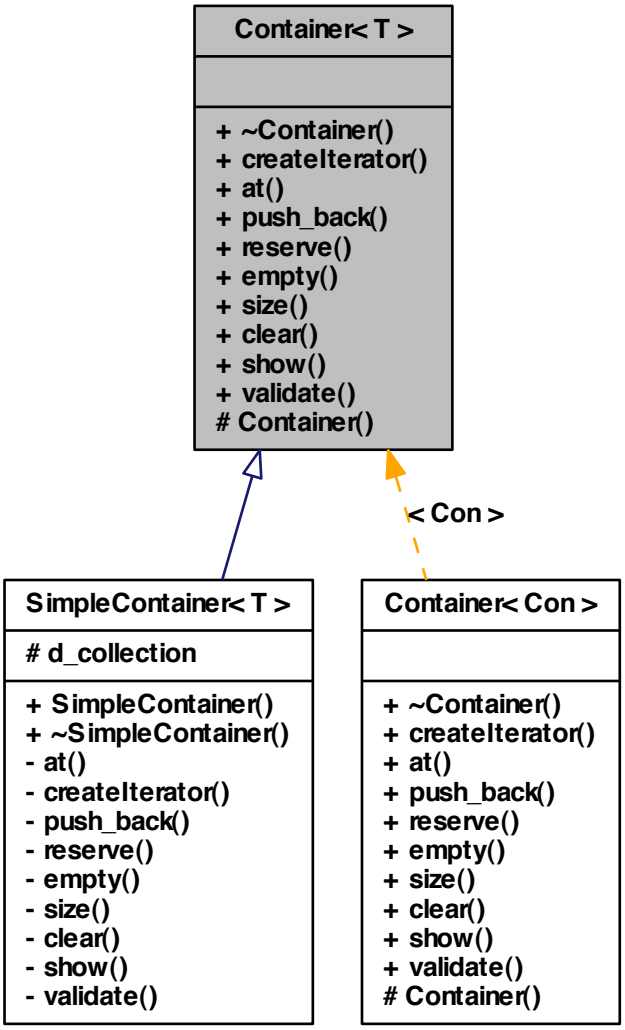
- pkg/AMORE/src/dia/Con.h
- pkg/AMORE/src/Con.cpp

## 5.8 Container< T > Class Template Reference

class Container -

`#include <Container.h>`

Inheritance diagram for Container< T >:




## Public Member Functions

- virtual ~Container ()
- virtual boost::shared_ptr< Iterator< T > > createIterator ()=0
- virtual T at (size_type element)=0
- virtual void push_back (T const &const_reference)=0

- virtual void reserve (int n)=0
- virtual bool empty ()=0
- virtual size_type size ()=0
- virtual void clear ()=0
- virtual void show ()=0
- virtual bool validate ()=0

### Protected Member Functions

- Container ()

## 5.8.1 Detailed Description

**template<typename T>class Container< T >**

class Container -

Definition at line 5 of file Container.h.

## 5.8.2 Constructor & Destructor Documentation

### 5.8.2.1 template<typename T > Container< T >::~Container ( ) [virtual]

Definition at line 20 of file Container.cpp.

```
{
}
```

### 5.8.2.2 template<typename T > Container< T >::Container ( ) [protected]

Definition at line 14 of file Container.cpp.

```
{
}
```

## 5.8.3 Member Function Documentation

### 5.8.3.1 template<typename T> virtual T Container< T >::at ( size_type *element* ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.2 template<typename T> virtual void Container< T >::clear ( ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.3 template<typename T> virtual boost::shared_ptr< Iterator<T> > Container< T >::createIterator ( ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.4 template<typename T> virtual bool Container< T >::empty ( ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.5 template<typename T> virtual void Container< T >::push_back ( T const & *const_reference* ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.6 template<typename T> virtual void Container< T >::reserve ( int *n* ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.7 template<typename T> virtual void Container< T >::show ( ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.8 template<typename T> virtual size_type Container< T >::size ( ) [pure virtual]

Implemented in SimpleContainer< T >.

#### 5.8.3.9 template<typename T> virtual bool Container< T >::validate ( ) [pure virtual]

Implemented in SimpleContainer< T >.

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

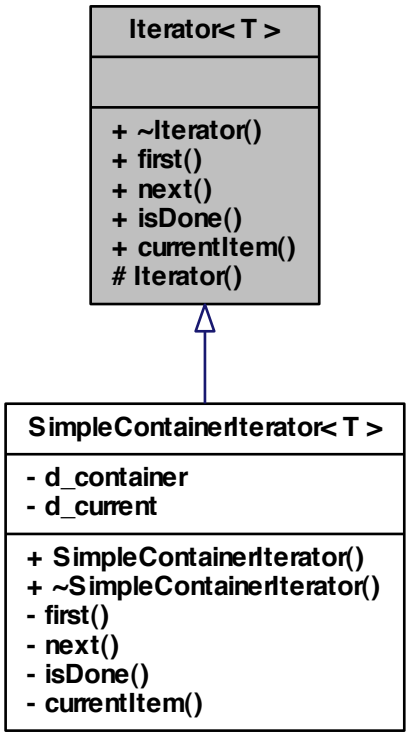
- pkg/AMORE/src/dia/Container.h
- pkg/AMORE/src/Container.cpp

## 5.9 Iterator< T > Class Template Reference

class Iterator -

`#include <Iterator.h>`

Inheritance diagram for Iterator< T >:




### Public Member Functions

- virtual ~Iterator ()
- virtual void first ()=0
- virtual void next ()=0
- virtual bool isDone ()=0
- virtual T currentItem ()=0

### Protected Member Functions

- Iterator ()

## 5.9.1 Detailed Description

template<typename T>class Iterator< T >

class Iterator -

Definition at line 5 of file Iterator.h.

## 5.9.2 Constructor & Destructor Documentation

### 5.9.2.1 template<typename T > Iterator< T >::~Iterator ( ) [virtual]

Definition at line 20 of file Iterator.cpp.

```
{
}
```

### 5.9.2.2 template<typename T > Iterator< T >::Iterator ( ) [protected]

Definition at line 14 of file Iterator.cpp.

```
{
}
```

## 5.9.3 Member Function Documentation

### 5.9.3.1 template<typename T > virtual T Iterator< T >::currentItem ( ) [pure virtual]

Implemented in SimpleContainerIterator< T >.

### 5.9.3.2 template<typename T > virtual void Iterator< T >::first ( ) [pure virtual]

Implemented in SimpleContainerIterator< T >.

### 5.9.3.3 template<typename T > virtual bool Iterator< T >::isDone ( ) [pure virtual]

Implemented in SimpleContainerIterator< T >.

#### 5.9.3.4 template<typename T > virtual void Iterator< T >::next ( ) [pure virtual]

Implemented in SimpleContainerIterator< T >.

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

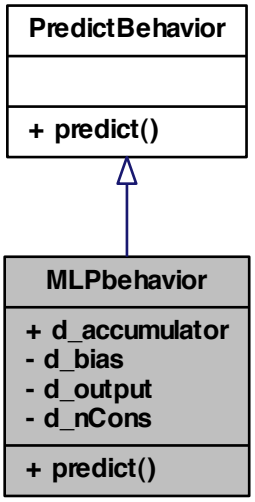
- pkg/AMORE/src/dia/Iterator.h
- pkg/AMORE/src/Iterator.cpp

## 5.10 MLPbehavior Class Reference

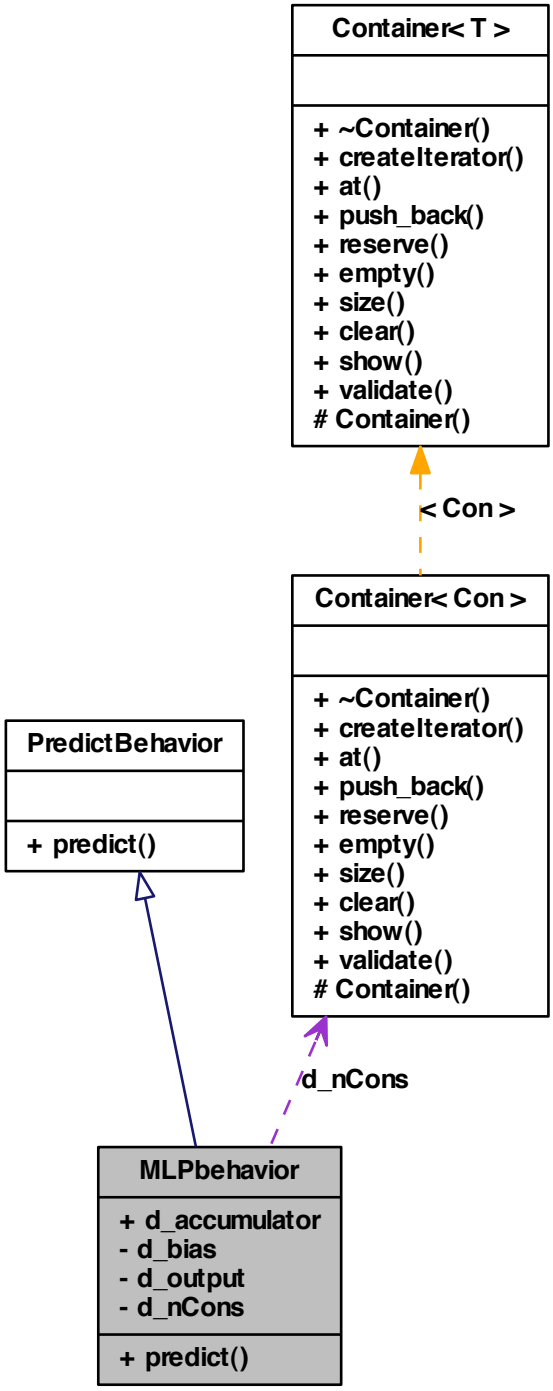
class MLPbehavior -

`#include <MLPbehavior.h>`

Inheritance diagram for MLPbehavior:



Collaboration diagram for MLPbehavior:



### Public Member Functions

- void predict ()

### Public Attributes

- double d_accumulator

### Private Attributes

- double d_bias
- double d_output
- Container< Con > d_nCons

## 5.10.1 Detailed Description

class MLPbehavior -

Definition at line 5 of file MLPbehavior.h.

## 5.10.2 Member Function Documentation

### 5.10.2.1 void MLPbehavior::predict ( )

Reimplemented from PredictBehavior.

## 5.10.3 Member Data Documentation

### 5.10.3.1 double MLPbehavior::d_accumulator

Definition at line 8 of file MLPbehavior.h.

### 5.10.3.2 double MLPbehavior::d_bias [private]

Definition at line 10 of file MLPbehavior.h.

### 5.10.3.3 Container<Con> MLPbehavior::d_nCons [private]

Definition at line 12 of file MLPbehavior.h.

#### 5.10.3.4 double MLPbehavior::d_output [private]

Definition at line 11 of file MLPbehavior.h.

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

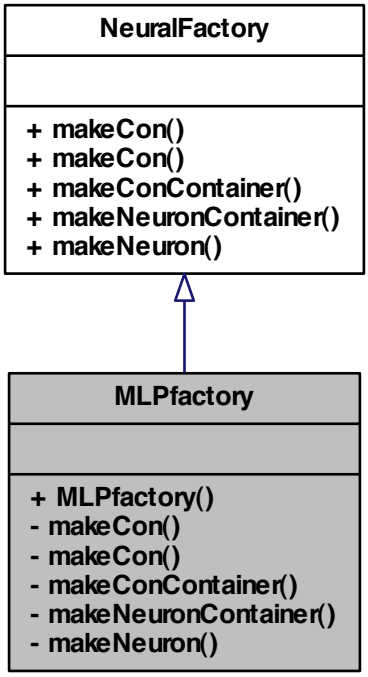
- pkg/AMORE/src/dia/MLPbehavior.h

## 5.11 MLPfactory Class Reference

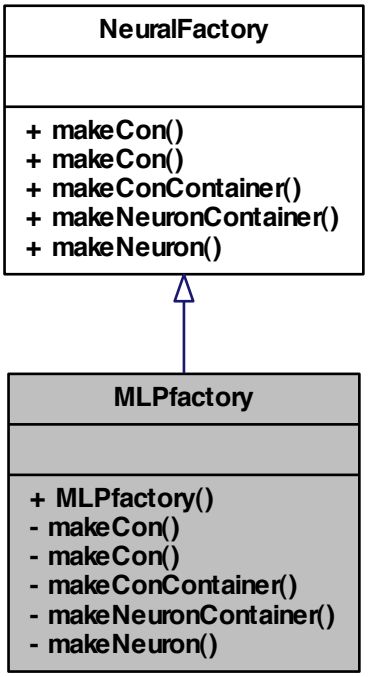
class MLPfactory -

`#include <MLPfactory.h>`

Inheritance diagram for MLPfactory:



Collaboration diagram for MLPfactory:




### Public Member Functions

- MLPfactory ()

### Private Member Functions

- Con * makeCon (Neuron &neuron)
- Con * makeCon (Neuron &neuron, double weight)
- Container< ConPtr > * makeConContainer ()
- Container< NeuronPtr > * makeNeuronContainer ()
- Neuron * makeNeuron ()

## 5.11.1 Detailed Description

class MLPfactory -

Definition at line 5 of file MLPfactory.h.

### 5.11.2 Constructor & Destructor Documentation

#### 5.11.2.1 MLPfactory::MLPfactory ( )

Definition at line 13 of file MLPfactory.cpp.

```
{
}
```

### 5.11.3 Member Function Documentation

#### 5.11.3.1 Con * MLPfactory::makeCon ( Neuron & *neuron* ) [private, virtual]

Implements NeuralFactory.

Definition at line 19 of file MLPfactory.cpp.

```
{
  return new Con(neuron);
}
```

#### 5.11.3.2 Con * MLPfactory::makeCon ( Neuron & *neuron,* double *weight* ) [private, virtual]

Implements NeuralFactory.

Definition at line 25 of file MLPfactory.cpp.

```
{
  return new Con(neuron, weight);
}
```

#### 5.11.3.3 Container< ConPtr > * MLPfactory::makeConContainer ( ) [private, virtual]

Implements NeuralFactory.

Definition at line 31 of file MLPfactory.cpp.

```
{
  return new SimpleContainer<ConPtr> ;
}
```

#### 5.11.3.4 Neuron * MLPfactory::makeNeuron ( ) [private, virtual]

Implements NeuralFactory.

Definition at line 46 of file MLPfactory.cpp.

```
{
  return new SimpleNeuron();
}
```

#### 5.11.3.5 Container< NeuronPtr > * MLPfactory::makeNeuronContainer ( ) [private, virtual]

Implements NeuralFactory.

Definition at line 38 of file MLPfactory.cpp.

```
{
  return new SimpleContainer<NeuronPtr> ;
}
```

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

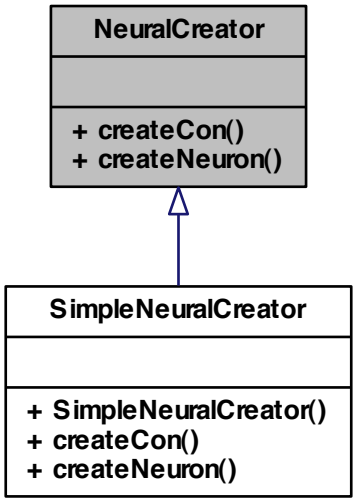
- pkg/AMORE/src/dia/MLPfactory.h
- pkg/AMORE/src/MLPfactory.cpp

## 5.12 NeuralCreator Class Reference

class NeuralCreator -

`#include <NeuralCreator.h>`

Inheritance diagram for NeuralCreator:




### Public Member Functions

- virtual Con * createCon (NeuralFactory &neuralFactory, Neuron &neuron)=0
- virtual Neuron * createNeuron (NeuralFactory &neuralFactory)=0

## 5.12.1 Detailed Description

class NeuralCreator -

Definition at line 4 of file NeuralCreator.h.

## 5.12.2 Member Function Documentation

### 5.12.2.1 virtual Con* NeuralCreator::createCon ( NeuralFactory & *neuralFactory,* Neuron & *neuron* ) [pure virtual]

Implemented in SimpleNeuralCreator.

5.12.2.2 virtual Neuron* NeuralCreator::createNeuron ( NeuralFactory & *neuralFactory* ) [pure virtual]

Implemented in SimpleNeuralCreator.

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

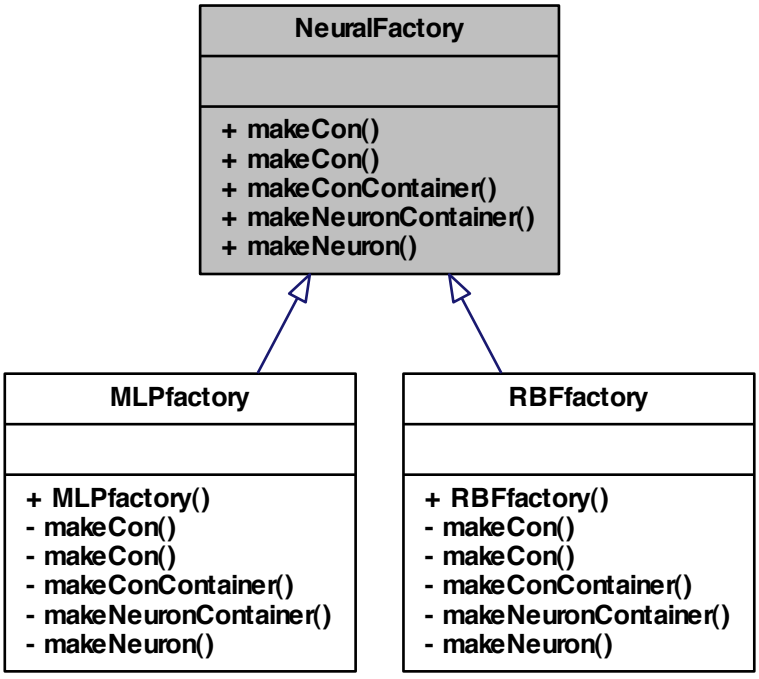
- pkg/AMORE/src/dia/NeuralCreator.h

## 5.13 NeuralFactory Class Reference

class NeuralFactory -

`#include <NeuralFactory.h>`

Inheritance diagram for NeuralFactory:



### Public Member Functions

- virtual Con * makeCon (Neuron &neuron)=0
- virtual Con * makeCon (Neuron &neuron, double weight)=0
- virtual Container< ConPtr > * makeConContainer ()=0
- virtual Container< NeuronPtr > * makeNeuronContainer ()=0
- virtual Neuron * makeNeuron ()=0

## 5.13.1 Detailed Description

class NeuralFactory -

Definition at line 4 of file NeuralFactory.h.

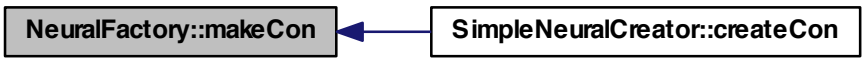
## 5.13.2 Member Function Documentation

### 5.13.2.1 virtual Con* NeuralFactory::makeCon ( Neuron & *neuron* ) [pure virtual]

Implemented in MLPfactory, and RBFfactory.

Referenced by SimpleNeuralCreator::createCon().

Here is the caller graph for this function:




### 5.13.2.2 virtual Con* NeuralFactory::makeCon ( Neuron & *neuron,* double *weight* ) [pure virtual]

Implemented in MLPfactory.

### 5.13.2.3 virtual Container<ConPtr>* NeuralFactory::makeConContainer ( ) [pure virtual]

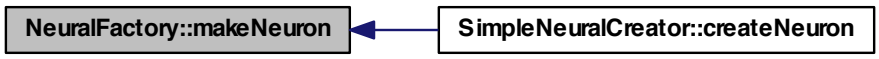
Implemented in MLPfactory, and RBFfactory.

#### 5.13.2.4 virtual Neuron* NeuralFactory::makeNeuron ( ) [pure virtual]

Implemented in MLPfactory, and RBFfactory.

Referenced by SimpleNeuralCreator::createNeuron().

Here is the caller graph for this function:




#### 5.13.2.5 virtual Container<NeuronPtr>* NeuralFactory::makeNeuronContainer ( ) [pure virtual]

Implemented in MLPfactory, and RBFfactory.

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

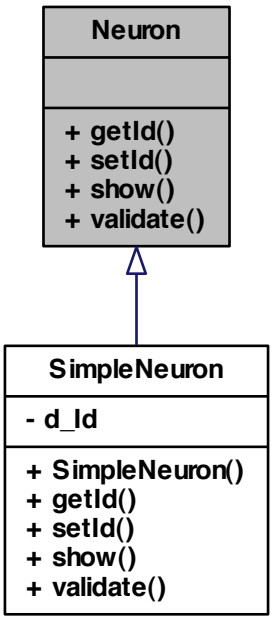
- pkg/AMORE/src/dia/NeuralFactory.h

## 5.14 Neuron Class Reference

class Neuron -

`#include <Neuron.h>`

Inheritance diagram for Neuron:




### Public Member Functions

- virtual Handler getId ()=0
- virtual void setId (Handler Id)=0
- virtual void show ()=0
- virtual bool validate ()=0

## 5.14.1 Detailed Description

class Neuron -

Definition at line 3 of file Neuron.h.

## 5.14.2 Member Function Documentation

### 5.14.2.1 virtual Handler Neuron::getId ( ) [pure virtual]

Implemented in SimpleNeuron.

#### 5.14.2.2 virtual void Neuron::setId ( Handler *id* ) [pure virtual]

Implemented in SimpleNeuron.

#### 5.14.2.3 virtual void Neuron::show ( ) [pure virtual]

Implemented in SimpleNeuron.

#### 5.14.2.4 virtual bool Neuron::validate ( ) [pure virtual]

Implemented in SimpleNeuron.

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

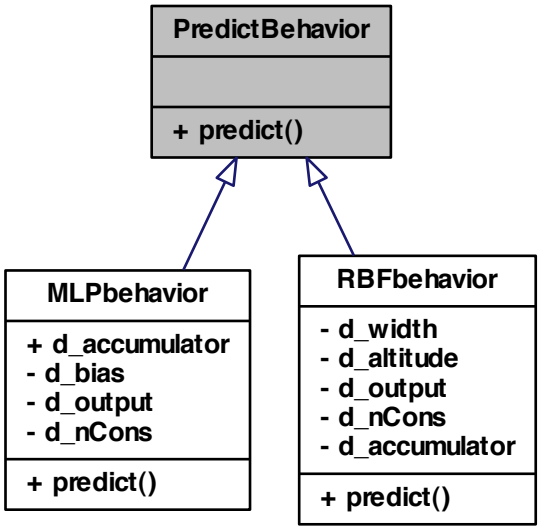
- pkg/AMORE/src/dia/Neuron.h

## 5.15 PredictBehavior Class Reference

class PredictBehavior -

`#include <PredictBehavior.h>`

Inheritance diagram for PredictBehavior:



### Public Member Functions

- void predict ()

### 5.15.1 Detailed Description

class PredictBehavior -

Definition at line 4 of file PredictBehavior.h.

### 5.15.2 Member Function Documentation

#### 5.15.2.1 void PredictBehavior::predict ( )

Reimplemented in MLPbehavior, and RBFbehavior.

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

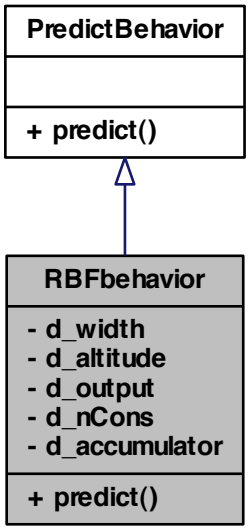
- pkg/AMORE/src/dia/PredictBehavior.h

## 5.16 RBFbehavior Class Reference

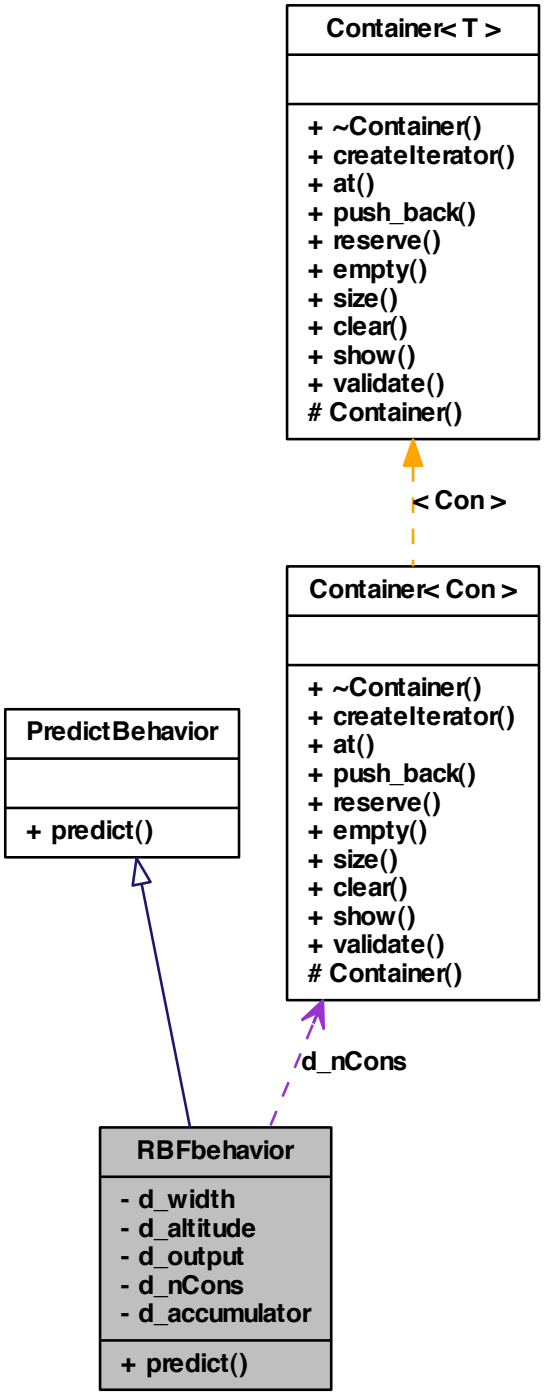
class RBFbehavior -

`#include <RBFbehavior.h>`

Inheritance diagram for RBFbehavior:



Collaboration diagram for RBFbehavior:



### Public Member Functions

- void predict ()

### Private Attributes

- double d_width
- double d_altitude
- double d_output
- Container< Con > d_nCons
- double d_accumulator

## 5.16.1 Detailed Description

class RBFbehavior -

Definition at line 5 of file RBFbehavior.h.

## 5.16.2 Member Function Documentation

### 5.16.2.1 void RBFbehavior::predict ( )

Reimplemented from PredictBehavior.

## 5.16.3 Member Data Documentation

### 5.16.3.1 double RBFbehavior::d_accumulator [private]

Definition at line 12 of file RBFbehavior.h.

### 5.16.3.2 double RBFbehavior::d_altitude [private]

Definition at line 9 of file RBFbehavior.h.

### 5.16.3.3 Container<Con> RBFbehavior::d_nCons [private]

Definition at line 11 of file RBFbehavior.h.

### 5.16.3.4 double RBFbehavior::d_output [private]

Definition at line 10 of file RBFbehavior.h.

#### 5.16.3.5 double RBFbehavior::d_width [private]

Definition at line 8 of file RBFbehavior.h.

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

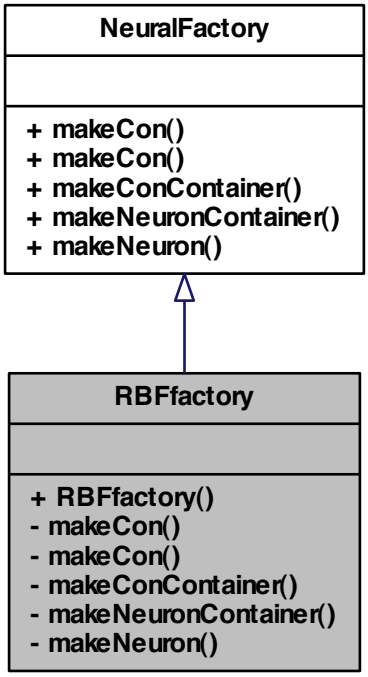
- pkg/AMORE/src/dia/RBFbehavior.h

## 5.17 RBFfactory Class Reference

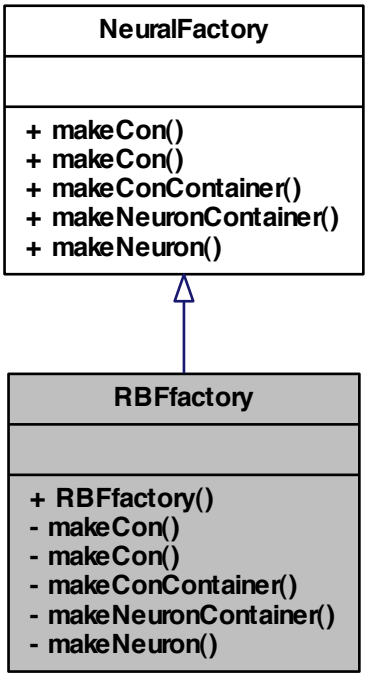
class RBFfactory -

`#include <RBFfactory.h>`

Inheritance diagram for RBFfactory:



Collaboration diagram for RBFfactory:




### Public Member Functions

- RBFfactory ()

### Private Member Functions

- Con * makeCon (Neuron *neuron, double weight)
- Con * makeCon (Neuron &neuron)
- Container< ConPtr > * makeConContainer ()
- Container< NeuronPtr > * makeNeuronContainer ()
- Neuron * makeNeuron ()

## 5.17.1 Detailed Description

class RBFfactory -

Definition at line 5 of file RBFfactory.h.

### 5.17.2 Constructor & Destructor Documentation

#### 5.17.2.1 RBFfactory::RBFfactory ( )

### 5.17.3 Member Function Documentation

#### 5.17.3.1 Con* RBFfactory::makeCon ( Neuron * *neuron*, double *weight* ) [private]

#### 5.17.3.2 Con* RBFfactory::makeCon ( Neuron & *neuron* ) [private, virtual]

Implements NeuralFactory.

#### 5.17.3.3 Container<ConPtr>* RBFfactory::makeConContainer ( ) [private, virtual]

Implements NeuralFactory.

#### 5.17.3.4 Neuron* RBFfactory::makeNeuron ( ) [private, virtual]

Implements NeuralFactory.

#### 5.17.3.5 Container<NeuronPtr>* RBFfactory::makeNeuronContainer ( ) [private, virtual]

Implements NeuralFactory.

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

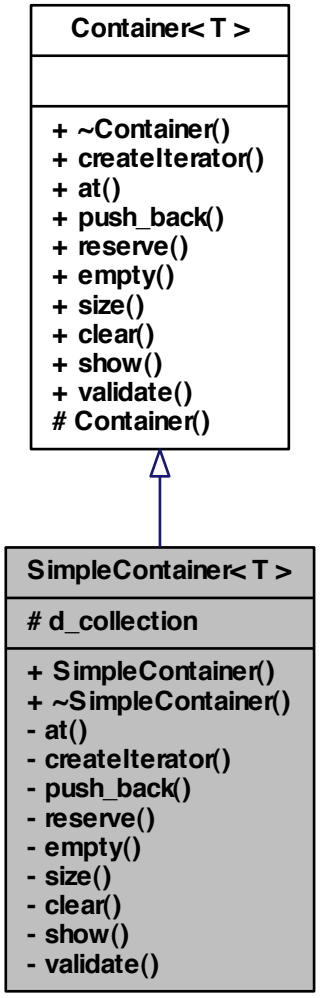
- pkg/AMORE/src/dia/RBFfactory.h

## 5.18 SimpleContainer< T > Class Template Reference

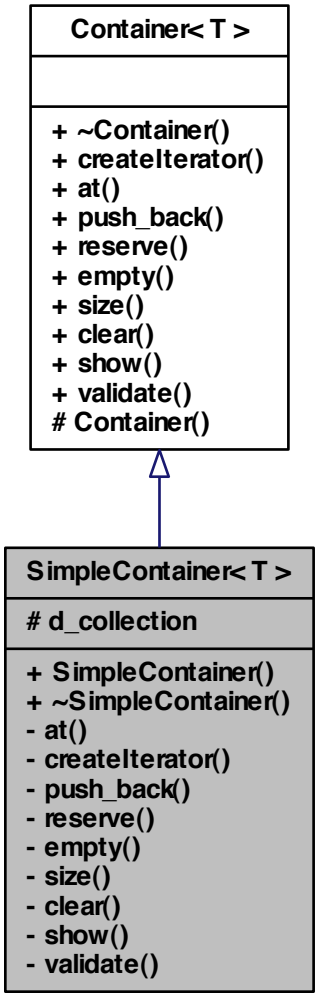
class SimpleContainer -

`#include <SimpleContainer.h>`

Inheritance diagram for SimpleContainer< T >:



Collaboration diagram for SimpleContainer< T >:




## Public Member Functions

- SimpleContainer ()
- ~SimpleContainer ()

### Protected Attributes

- std::vector< T > d_collection

### Private Member Functions

- T at (size_type element)

  *Append a shared_ptr at the end of collection.*
- boost::shared_ptr< Iterator< T > > createIterator ()
- void push_back (T const &const_reference)
- void reserve (int n)
- bool empty ()
- size_type size ()

  *Returns the size or length of the vector.*
- void clear ()
- void show ()

  *Pretty print of the SimpleContainer<T>*
- bool validate ()

  *Object validator.*

### Friends

- class SimpleContainerIterator< T >

## 5.18.1 Detailed Description

**template<typename T>class SimpleContainer< T >**

class SimpleContainer -

Definition at line 6 of file SimpleContainer.h.

## 5.18.2 Constructor & Destructor Documentation

### 5.18.2.1 template<typename T > SimpleContainer< T >::SimpleContainer ( )

Definition at line 11 of file SimpleContainer.cpp.

```
{
}
```

#### 5.18.2.2 template<typename T > SimpleContainer< T >::~SimpleContainer ( )

Definition at line 17 of file SimpleContainer.cpp.

```
{

}
```

### 5.18.3 Member Function Documentation

#### 5.18.3.1 template<typename T > T SimpleContainer< T >::at ( size_type *element* ) [private, virtual]

Append a shared_ptr at the end of collection.

Implements push_back for the Container class

**Parameters**

| | |
|---|---|
| *TsharedPtr* | A shared_ptr pointer to be inserted at the end of collection |

```
            //================
            //Usage example:
            //================
            // Data set up
                    Neuron N1, N2, N3;
                    Container<Con> conContainer;
                    std::vector<ConPtr> vc;
                    std::vector<int> result;
                    N1.setId(10);
                    N2.setId(20);
                    N3.setId(30);
            // Test
                    ConPtr ptCon( new Con(&N1, 1.13) );     // Create new Con
 and initialize ptCon
                    conContainer.push_back(ptCon);                          /
/ push_back
                    ptCon.reset(  new Con(&N2, 2.22) );             // create
 new Con and assign to ptCon
                    conContainer.push_back(ptCon);                          /
/ push_back
                    ptCon.reset(  new Con(&N3, 3.33) );             // create
 new Con and assign to ptCon
                    conContainer.push_back(ptCon);                          /
/ push_back

                    vc = conContainer.load();

                    result.push_back(vc.at(0)->getId());
                    result.push_back(vc.at(1)->getId());
                    result.push_back(vc.at(2)->getId());
  // After execution of this code, result contains a numeric vector with va
lues 10, 20 and 30.
```

**See also**

C++ documentation for std::vector::push_back and the unit test files, e.g., runit.Cpp.Container.R, for usage examples.

Implements Container< T >.

Definition at line 69 of file SimpleContainer.cpp.

```
{
return d_collection.at(element);
}
```

#### 5.18.3.2 template<typename T > void SimpleContainer< T >::clear ( ) [private, virtual]

Implements Container< T >.

Definition at line 182 of file SimpleContainer.cpp.

```
{
d_collection.clear();
}
```

#### 5.18.3.3 template<typename T > boost::shared_ptr< Iterator< T > > SimpleContainer< T >::createIterator ( ) [private, virtual]

Implements Container< T >.

Definition at line 23 of file SimpleContainer.cpp.

```
{
  boost::shared_ptr < SimpleContainerIterator<T> > iteratorPtr(  new
    SimpleContainerIterator<T> ());
  iteratorPtr->d_container = this;
  iteratorPtr->d_current= 0;
  return iteratorPtr;
}
```

#### 5.18.3.4 template<typename T > bool SimpleContainer< T >::empty ( ) [private, virtual]

Implements Container< T >.

Definition at line 168 of file SimpleContainer.cpp.

```
{
  return (d_collection.empty());
}
```

#### 5.18.3.5 template<typename T > void SimpleContainer< T >::push_back ( T const & *const_reference* ) [private, virtual]

Implements Container< T >.

Definition at line 77 of file SimpleContainer.cpp.

```
{
d_collection.push_back(reference);
}
```

#### 5.18.3.6 template<typename T > void SimpleContainer< T >::reserve ( int *n* ) [private, virtual]

Implements Container< T >.

Definition at line 175 of file SimpleContainer.cpp.

```
{
d_collection.reserve(n);
}
```

#### 5.18.3.7 template<typename T > void SimpleContainer< T >::show ( ) [private, virtual]

Pretty print of the SimpleContainer<T>

This method outputs in the R terminal the contents of Container::collection.

**Returns**

true in case everything works without throwing an exception

*

```
            //================
            //Usage example:
            //================
            // Data set up
                    ContainerNeuronPtr      neuronContainerPtr( new
    Container<Neuron>() );
                    ContainerConPtr conContainerPtr( new Container<Con>() );
                    ConPtr  ptC;
                    NeuronPtr ptN;
                    int ids[]= {10, 20, 30};
                    double weights[] = {1.13, 2.22, 3.33 };

                    for (int i=0; i<=2 ; i++) {                              /
    / Let's create a vector with three neurons
                            ptN.reset( new Neuron( ids[i] ) );
                            neuronContainerPtr->push_back(ptN);
                    }
```

```
                  for (int i=0; i<=2 ; i++) {                              /
    / and a vector with three connections
                        ptC.reset( new Con( neuronContainerPtr->load().at
    (i), weights[i]) );
                        conContainerPtr->push_back(ptC);
                  }

            // Test
                  conContainerPtr->show() ;

            // The output at the R terminal would display:
            //
            //      # From:  10      Weight=         1.130000
            //      # From:  20      Weight=         2.220000
            //      # From:  30      Weight=         3.330000
            //
```

**See also**

The unit test files, e.g., runit.Cpp.Container.R, for usage examples.

Implements Container< T >.

Definition at line 127 of file SimpleContainer.cpp.

```
{
    boost::shared_ptr< Iterator <T> >  itr = createIterator();
    for ( itr->first(); !itr->isDone(); itr->next() ) {
       itr->currentItem()->show();
    }
}
```

#### 5.18.3.8 template<typename T > size_type SimpleContainer< T >::size ( )

[private, virtual]

Returns the size or length of the vector.

This method returns the size of the vector. In the classes derived from SimpleContainer<T> this is aliased as numOfCons, numOfNeurons and numOfLayers. The unit test files, e.g., runit.Cpp.Container.R, for usage examples.

Implements Container< T >.

Definition at line 160 of file SimpleContainer.cpp.

```
{
  return d_collection.size();
}
```

#### 5.18.3.9 template<typename T > bool SimpleContainer< T >::validate ( )

[private, virtual]

Object validator.

This method checks the object for internal coherence. This method calls the validate method for each element in collection,

**See also**

The unit test files, e.g., runit.Cpp.Container.R, for usage examples.

Implements Container< T >.

Definition at line 142 of file SimpleContainer.cpp.

```
{
   boost::shared_ptr< Iterator <T> >  itr = createIterator();
   for ( itr->first(); !itr->isDone(); itr->next() ) {
      itr->currentItem()->validate();
   }
return true;
}
```

### 5.18.4 Friends And Related Function Documentation

#### 5.18.4.1 template<typename T > friend class SimpleContainerIterator< T > [friend]

Definition at line 12 of file SimpleContainer.h.

### 5.18.5 Member Data Documentation

#### 5.18.5.1 template<typename T > std::vector< T > SimpleContainer< T >::d_collection [protected]

Definition at line 9 of file SimpleContainer.h.

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

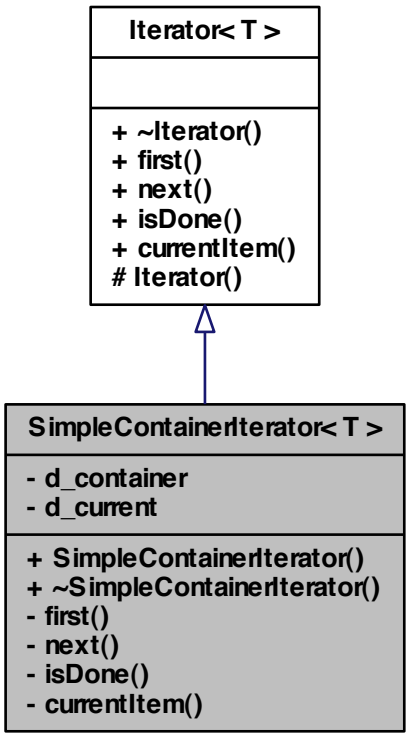
- pkg/AMORE/src/dia/SimpleContainer.h
- pkg/AMORE/src/SimpleContainer.cpp

## 5.19 SimpleContainerIterator< T > Class Template Reference

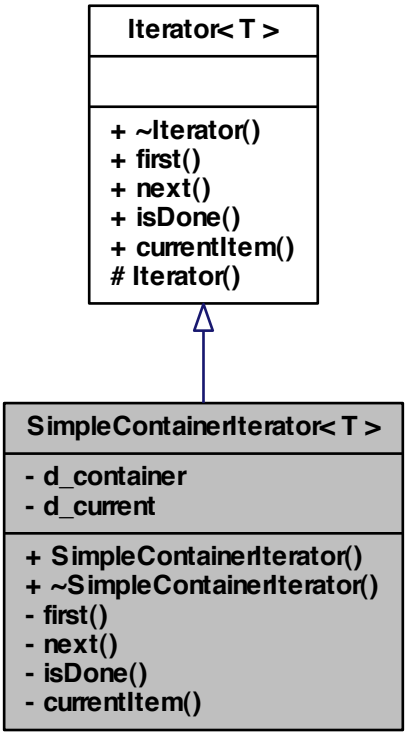
class SimpleContainerIterator -

`#include <SimpleContainerIterator.h>`

Inheritance diagram for SimpleContainerIterator< T >:



Collaboration diagram for SimpleContainerIterator< T >:




## Public Member Functions

- SimpleContainerIterator ()
- ~SimpleContainerIterator ()

## Private Member Functions

- void first ()
- void next ()
- bool isDone ()
- T currentItem ()

### Private Attributes

- Container< T > * d_container
- size_type d_current

### Friends

- class SimpleContainer< T >

## 5.19.1 Detailed Description

**template<typename T>class SimpleContainerIterator< T >**

class SimpleContainerIterator -

Definition at line 6 of file SimpleContainerIterator.h.

## 5.19.2 Constructor & Destructor Documentation

### 5.19.2.1 template<typename T > SimpleContainerIterator< T >::SimpleContainerIterator ( )

Definition at line 4 of file SimpleContainerIterator.cpp.

```
{
}
```

### 5.19.2.2 template<typename T > SimpleContainerIterator< T >::~SimpleContainerIterator ( )

Definition at line 9 of file SimpleContainerIterator.cpp.

```
{
}
```

## 5.19.3 Member Function Documentation

### 5.19.3.1 template<typename T > T SimpleContainerIterator< T >::currentItem ( ) [private, virtual]

Implements Iterator< T >.

Definition at line 37 of file SimpleContainerIterator.cpp.

```
{
  if (isDone())
    {
       throw std::range_error("SimpleContainerIterator::currentItem  Error: Ite
    ratorOutOfBounds");
    }
  else
    {
      return d_container->at(d_current);
    }

}
```

#### 5.19.3.2 template<typename T > void SimpleContainerIterator< T >::first ( ) [private, virtual]

Implements Iterator< T >.

Definition at line 15 of file SimpleContainerIterator.cpp.

```
{
  d_current = 0;
}
```

#### 5.19.3.3 template<typename T > bool SimpleContainerIterator< T >::isDone ( ) [private, virtual]

Implements Iterator< T >.

Definition at line 29 of file SimpleContainerIterator.cpp.

```
{
  bool IteratorIsDone(d_current == d_container->size());
  return IteratorIsDone;
}
```

#### 5.19.3.4 template<typename T > void SimpleContainerIterator< T >::next ( ) [private, virtual]

Implements Iterator< T >.

Definition at line 22 of file SimpleContainerIterator.cpp.

```
{
  ++d_current;
}
```

### 5.19.4 Friends And Related Function Documentation

#### 5.19.4.1 template<typename T > friend class SimpleContainer< T > [friend]

Definition at line 13 of file SimpleContainerIterator.h.

### 5.19.5 Member Data Documentation

#### 5.19.5.1 template<typename T > Container<T>* SimpleContainerIterator< T >::d_container [private]

Definition at line 9 of file SimpleContainerIterator.h.

#### 5.19.5.2 template<typename T > size_type SimpleContainerIterator< T >::d_current [private]

Definition at line 10 of file SimpleContainerIterator.h.

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

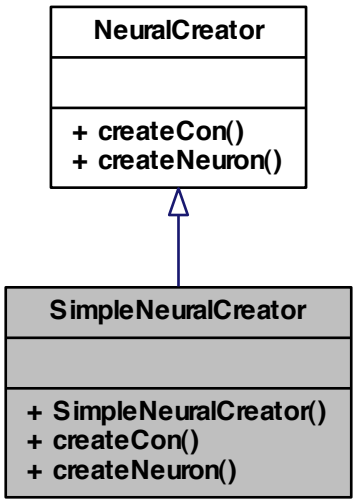
- pkg/AMORE/src/dia/SimpleContainerIterator.h
- pkg/AMORE/src/SimpleContainerIterator.cpp

## 5.20 SimpleNeuralCreator Class Reference

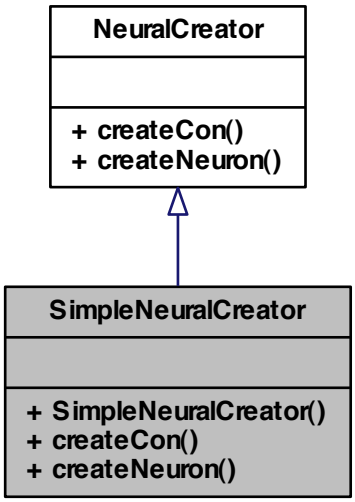
class SimpleNeuralCreator -

`#include <SimpleNeuralCreator.h>`

Inheritance diagram for SimpleNeuralCreator:



Collaboration diagram for SimpleNeuralCreator:




## Public Member Functions

- SimpleNeuralCreator ()
- Con * createCon (NeuralFactory &neuralFactory, Neuron &neuron)
- Neuron * createNeuron (NeuralFactory &neuralFactory)

### 5.20.1 Detailed Description

class SimpleNeuralCreator -

Definition at line 5 of file SimpleNeuralCreator.h.

### 5.20.2 Constructor & Destructor Documentation

#### 5.20.2.1 SimpleNeuralCreator::SimpleNeuralCreator ( )

Definition at line 15 of file SimpleNeuralCreator.cpp.

```
{
}
```

### 5.20.3 Member Function Documentation

#### 5.20.3.1 Con * SimpleNeuralCreator::createCon ( NeuralFactory & *neuralFactory*, Neuron & *neuron* ) [virtual]

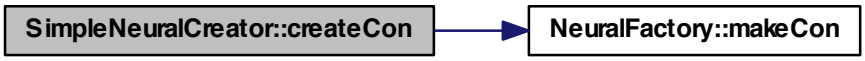
Implements NeuralCreator.

Definition at line 21 of file SimpleNeuralCreator.cpp.

References NeuralFactory::makeCon().

```
{
  return neuralFactory.makeCon(neuron);
}
```

Here is the call graph for this function:




#### 5.20.3.2 Neuron * SimpleNeuralCreator::createNeuron ( NeuralFactory & *neuralFactory* ) [virtual]

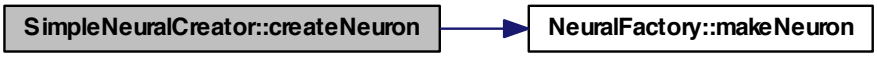
Implements NeuralCreator.

Definition at line 28 of file SimpleNeuralCreator.cpp.

References NeuralFactory::makeNeuron().

```
{
  return neuralFactory.makeNeuron();
}
```

Here is the call graph for this function:



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

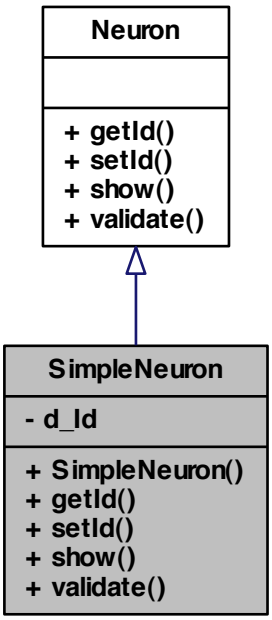
- pkg/AMORE/src/dia/SimpleNeuralCreator.h
- pkg/AMORE/src/SimpleNeuralCreator.cpp

## 5.21 SimpleNeuron Class Reference

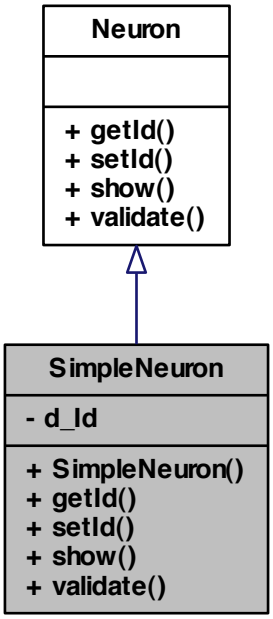
class SimpleNeuron -

`#include <SimpleNeuron.h>`

Inheritance diagram for SimpleNeuron:



Collaboration diagram for SimpleNeuron:




### Public Member Functions

- SimpleNeuron ()
- Handler getId ()
- void setId (Handler Id)
- void show ()
- bool validate ()

### Private Attributes

- int d_Id

#### 5.21.1 Detailed Description

class SimpleNeuron -

Definition at line 5 of file SimpleNeuron.h.

### 5.21.2 Constructor & Destructor Documentation

#### 5.21.2.1 SimpleNeuron::SimpleNeuron ( )

Definition at line 10 of file SimpleNeuron.cpp.

```
                                :
  d_Id(NA_INTEGER) //, nCons()
{
}
```

### 5.21.3 Member Function Documentation

#### 5.21.3.1 Handler SimpleNeuron::getId ( ) [virtual]

Implements Neuron.

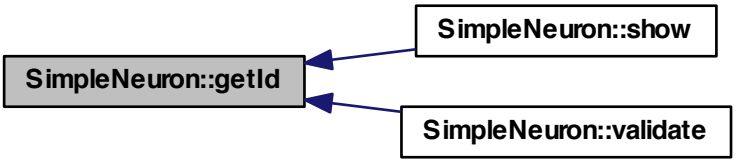
Definition at line 28 of file SimpleNeuron.cpp.

References d_Id.

Referenced by show(), and validate().

```
{
  return d_Id;
}
```

Here is the caller graph for this function:




#### 5.21.3.2 void SimpleNeuron::setId ( Handler *Id* ) [virtual]

Implements Neuron.

Definition at line 36 of file SimpleNeuron.cpp.

References d_Id.

```
{
   d_Id=Id;
}
```

#### 5.21.3.3 void SimpleNeuron::show ( ) [virtual]

Implements Neuron.

Definition at line 59 of file SimpleNeuron.cpp.

References getId().

```
{
  int id = getId();
  Rprintf("\n------------------------\n");
  if (id == NA_INTEGER)
    {
      Rprintf("\n Id: NA, Invalid neuron Id");
    }
  else
    {
      Rprintf("\n Id: %d", id);
    }
  Rprintf("\n------------------------\n");
#if 0

  if (nCons.size() == 0)
    {
      Rprintf("\n No connections defined");
    }
  else
    {
      nCons.show();
    }
  Rprintf("\n------------------------\n");
#endif
}
```

Here is the call graph for this function:

#### 5.21.3.4 bool SimpleNeuron::validate ( ) [virtual]

Implements Neuron.

Definition at line 87 of file SimpleNeuron.cpp.

References getId().

```
{
  BEGIN_RCPP
  if (getId() == NA_INTEGER ) throw std::range_error("[C++ SimpleNeuron::validate
      ]: Error, Id is NA.");
 // nCons.validate();
  return (TRUE);
END_RCPP}
```

Here is the call graph for this function:

### 5.21.4 Member Data Documentation

#### 5.21.4.1 int SimpleNeuron::d_Id [private]

Definition at line 8 of file SimpleNeuron.h.

Referenced by getId(), and setId().

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

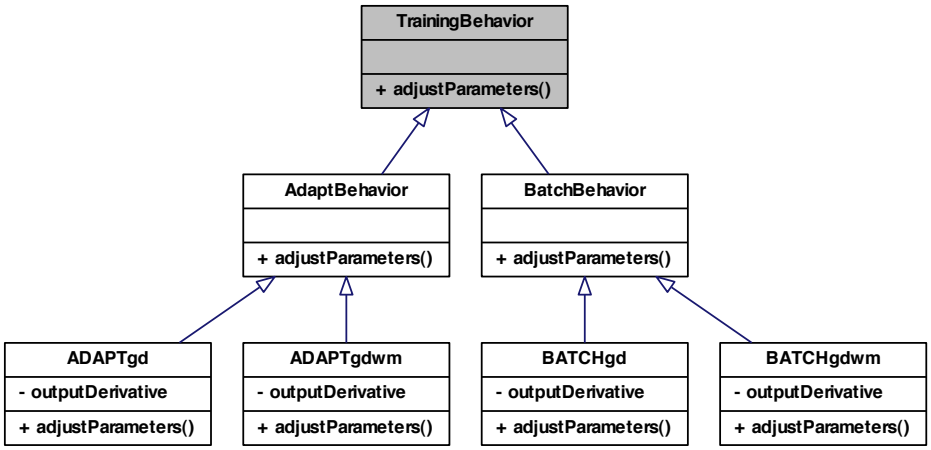
- pkg/AMORE/src/dia/SimpleNeuron.h
- pkg/AMORE/src/SimpleNeuron.cpp

## 5.22 TrainingBehavior Class Reference

class TrainingBehavior -

`#include <TrainingBehavior.h>`

Inheritance diagram for TrainingBehavior:




## Public Member Functions

- void adjustParameters ()

### 5.22.1 Detailed Description

class TrainingBehavior -

Definition at line 4 of file TrainingBehavior.h.

### 5.22.2 Member Function Documentation

#### 5.22.2.1 void TrainingBehavior::adjustParameters ( )

Reimplemented in AdaptBehavior, ADAPTgd, ADAPTgdwm, BatchBehavior, BATCHgd, and BATCHgdwm.

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

- pkg/AMORE/src/dia/TrainingBehavior.h

# Chapter 6

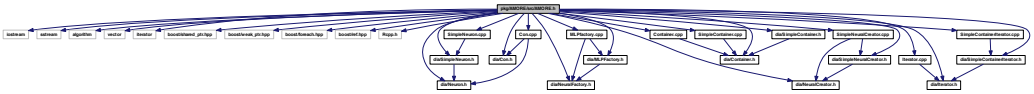
# File Documentation

## 6.1 pkg/AMORE/src/AMORE.h File Reference

```
#include <iostream>
#include <sstream>
#include <algorithm>
#include <vector>
#include <iterator>
#include <boost/shared_ptr.hpp>
#include <boost/weak_ptr.hpp>
#include <boost/foreach.hpp>
#include <boost/ref.hpp>
#include <Rcpp.h>
#include "dia/Con.h"
#include "dia/Neuron.h"
#include "dia/SimpleNeuron.h"
#include "dia/NeuralFactory.h"
#include "dia/MLPFactory.h"
#include "dia/NeuralCreator.h"
#include "dia/SimpleNeuralCreator.h"
#include "dia/Container.h"
#include "dia/SimpleContainer.h"
#include "dia/Iterator.h"
#include "dia/SimpleContainerIterator.h"
```

```
#include "Con.cpp"
#include "SimpleNeuron.cpp"
#include "MLPfactory.cpp"
#include "SimpleNeuralCreator.cpp"
#include "Container.cpp"
#include "Iterator.cpp"
#include "SimpleContainer.cpp"
#include "SimpleContainerIterator.cpp"
```

Include dependency graph for AMORE.h:



## Defines

- #define foreach BOOST_FOREACH
- #define size_type unsigned int

## Typedefs

- typedef int Handler
- typedef boost::reference_wrapper< PredictBehavior > PredictBehaviorRef
- typedef boost::reference_wrapper< TrainingBehavior > TrainingBehaviorRef
- typedef boost::reference_wrapper< Neuron > NeuronRef
- typedef boost::shared_ptr< Neuron > NeuronPtr
- typedef boost::shared_ptr< Con > ConPtr
- typedef boost::shared_ptr< Iterator< NeuronPtr > > NeuronIteratorPtr
- typedef boost::shared_ptr< Iterator< ConPtr > > ConIteratorPtr
- typedef boost::shared_ptr< Container< NeuronPtr > > NeuronContainerPtr
- typedef boost::shared_ptr< Container< ConPtr > > ConContainerPtr
- typedef boost::shared_ptr< NeuralFactory > NeuralFactoryPtr
- typedef boost::shared_ptr< NeuralCreator > NeuralCreatorPtr

### 6.1.1 Define Documentation

#### 6.1.1.1 #define foreach BOOST_FOREACH

Definition at line 61 of file AMORE.h.

#### 6.1.1.2 #define size_type unsigned int

Definition at line 64 of file AMORE.h.

### 6.1.2 Typedef Documentation

#### 6.1.2.1 typedef boost::shared_ptr< Container<ConPtr> > ConContainerPtr

Definition at line 80 of file AMORE.h.

#### 6.1.2.2 typedef boost::shared_ptr< Iterator<ConPtr> > ConIteratorPtr

Definition at line 77 of file AMORE.h.

#### 6.1.2.3 typedef boost::shared_ptr<Con> ConPtr

Definition at line 74 of file AMORE.h.

#### 6.1.2.4 typedef int Handler

Definition at line 67 of file AMORE.h.

#### 6.1.2.5 typedef boost::shared_ptr< NeuralCreator > NeuralCreatorPtr

Definition at line 83 of file AMORE.h.

#### 6.1.2.6 typedef boost::shared_ptr< NeuralFactory > NeuralFactoryPtr

Definition at line 82 of file AMORE.h.

#### 6.1.2.7 typedef boost::shared_ptr< Container<NeuronPtr> > NeuronContainerPtr

Definition at line 79 of file AMORE.h.

#### 6.1.2.8 typedef boost::shared_ptr< Iterator<NeuronPtr> > NeuronIteratorPtr

Definition at line 76 of file AMORE.h.

#### 6.1.2.9 typedef boost::shared_ptr<Neuron> NeuronPtr

Definition at line 73 of file AMORE.h.

#### 6.1.2.10 typedef boost::reference_wrapper<Neuron> NeuronRef

Definition at line 71 of file AMORE.h.

#### 6.1.2.11 typedef boost::reference_wrapper<PredictBehavior> PredictBehaviorRef

Definition at line 69 of file AMORE.h.

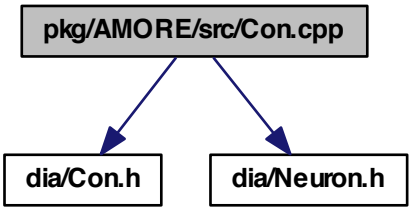
#### 6.1.2.12 typedef boost::reference_wrapper<TrainingBehavior> TrainingBehaviorRef

Definition at line 70 of file AMORE.h.

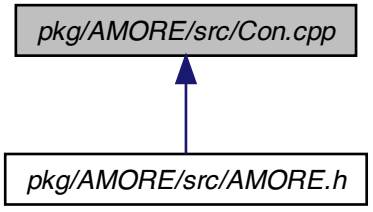
## 6.2 pkg/AMORE/src/Con.cpp File Reference

```
#include "dia/Con.h"
#include "dia/Neuron.h"
```

Include dependency graph for Con.cpp:



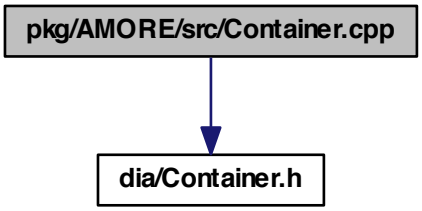
This graph shows which files directly or indirectly include this file:



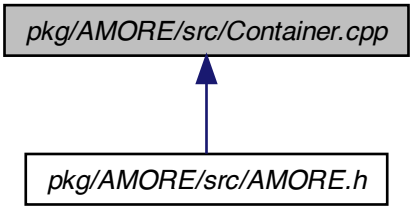

## 6.3 pkg/AMORE/src/Container.cpp File Reference

```
#include "dia/Container.h"
```

Include dependency graph for Container.cpp:



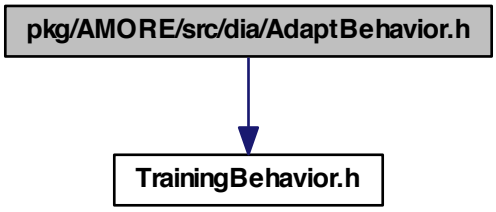
This graph shows which files directly or indirectly include this file:



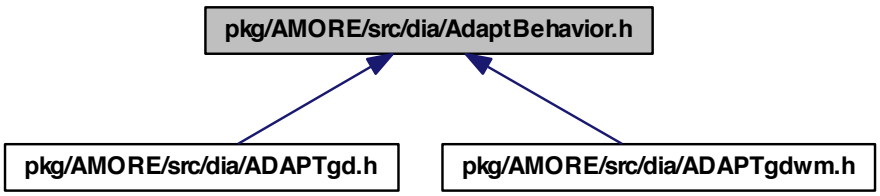

## 6.4 pkg/AMORE/src/dia/AdaptBehavior.h File Reference

```
#include "TrainingBehavior.h"
```

Include dependency graph for AdaptBehavior.h:



This graph shows which files directly or indirectly include this file:




### Classes

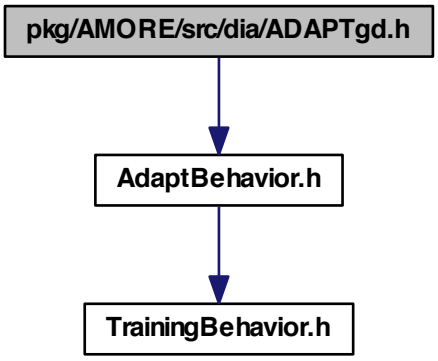
- class AdaptBehavior

  *class AdaptBehavior -*

## 6.5 pkg/AMORE/src/dia/ADAPTgd.h File Reference

```
#include "AdaptBehavior.h"
```

Include dependency graph for ADAPTgd.h:



### Classes

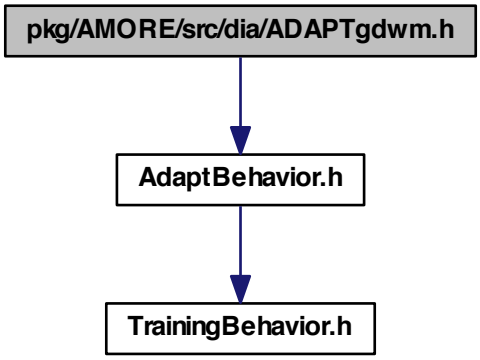
- class ADAPTgd

  *class ADAPTgd -*

## 6.6 pkg/AMORE/src/dia/ADAPTgdwm.h File Reference

```
#include "AdaptBehavior.h"
```

Include dependency graph for ADAPTgdwm.h:




### Classes

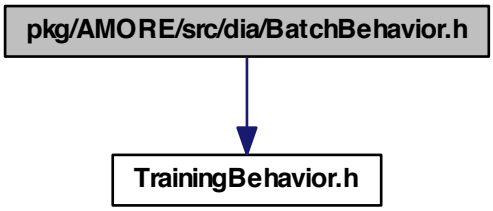
- class ADAPTgdwm

  *class ADAPTgdwm -*

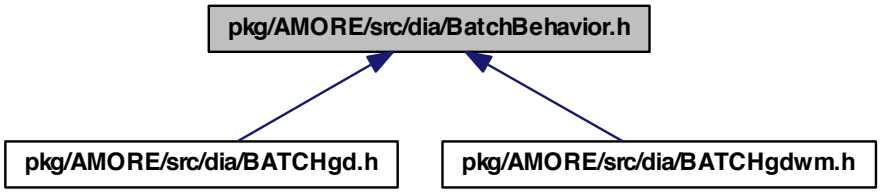
## 6.7 pkg/AMORE/src/dia/BatchBehavior.h File Reference

```
#include "TrainingBehavior.h"
```

Include dependency graph for BatchBehavior.h:




This graph shows which files directly or indirectly include this file:




### Classes

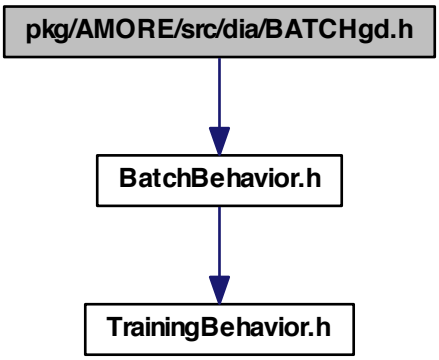
- class BatchBehavior

  *class BatchBehavior -*

## 6.8 pkg/AMORE/src/dia/BATCHgd.h File Reference

```
#include "BatchBehavior.h"
```

Include dependency graph for BATCHgd.h:




### Classes

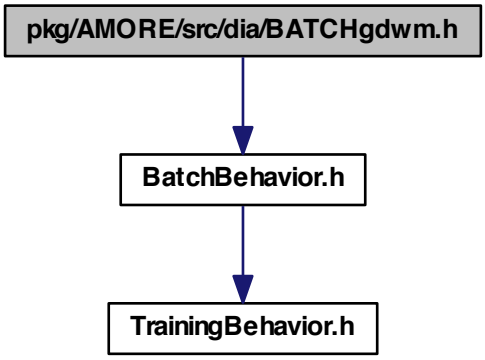
- class BATCHgd

  *class BATCHgd -*

## 6.9 pkg/AMORE/src/dia/BATCHgdwm.h File Reference

```
#include "BatchBehavior.h"
```

Include dependency graph for BATCHgdwm.h:



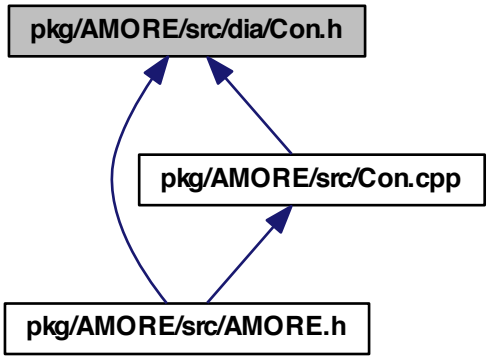

## Classes

- class BATCHgdwm

*class BATCHgdwm -*

## 6.10 pkg/AMORE/src/dia/Con.h File Reference

This graph shows which files directly or indirectly include this file:



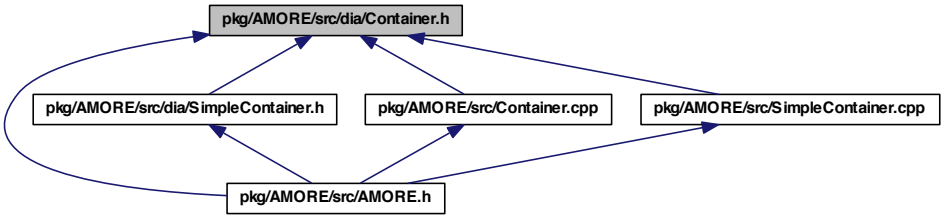

### Classes

- class Con

  *class Con -*

## 6.11 pkg/AMORE/src/dia/Container.h File Reference

This graph shows which files directly or indirectly include this file:



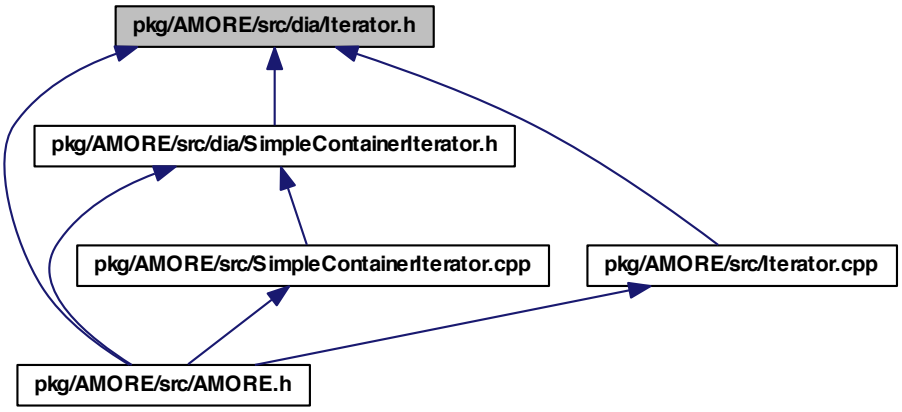
### Classes

- class Container< T >

  *class Container -*

## 6.12 pkg/AMORE/src/dia/Iterator.h File Reference

This graph shows which files directly or indirectly include this file:




### Classes

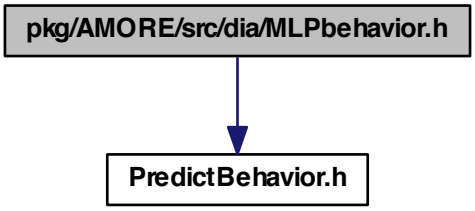
- class Iterator< T >

  *class Iterator -*

## 6.13 pkg/AMORE/src/dia/MLPbehavior.h File Reference

```
#include "PredictBehavior.h"
```

Include dependency graph for MLPbehavior.h:




### Classes

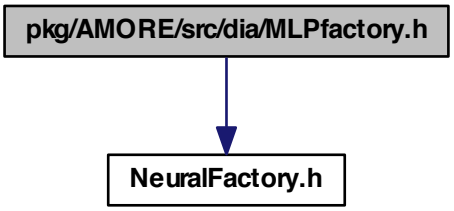
- class MLPbehavior

  *class MLPbehavior -*

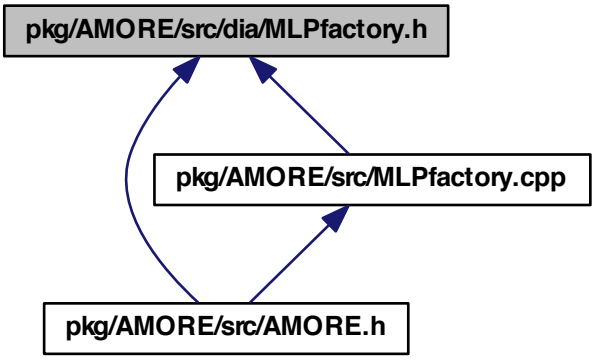
## 6.14 pkg/AMORE/src/dia/MLPfactory.h File Reference

```
#include "NeuralFactory.h"
```

Include dependency graph for MLPfactory.h:



This graph shows which files directly or indirectly include this file:



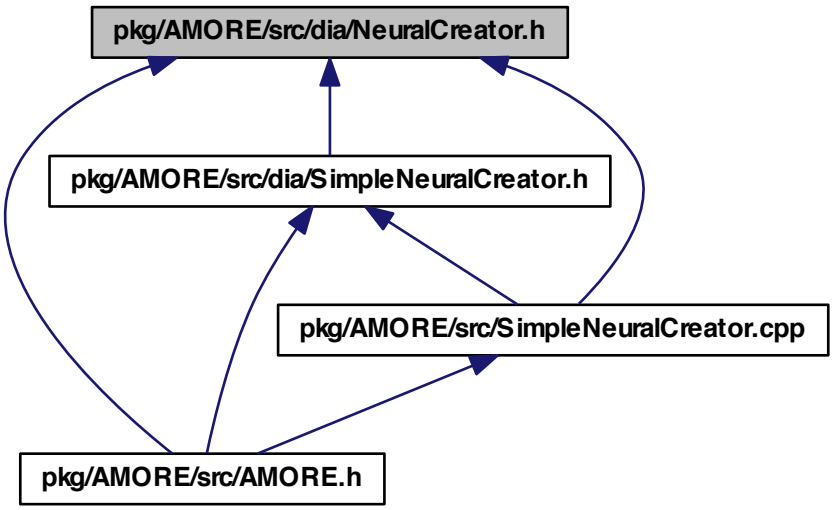

## Classes

- class MLPfactory

*class MLPfactory -*

## 6.15 pkg/AMORE/src/dia/NeuralCreator.h File Reference

This graph shows which files directly or indirectly include this file:



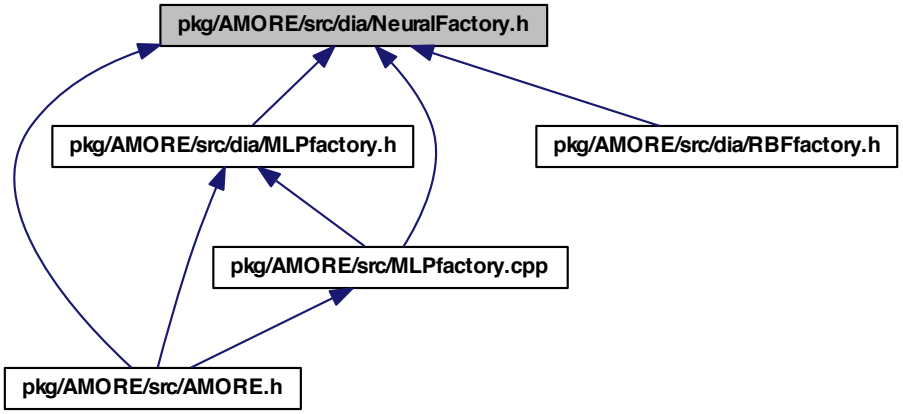

### Classes

- class NeuralCreator

  *class NeuralCreator -*

## 6.16 pkg/AMORE/src/dia/NeuralFactory.h File Reference

This graph shows which files directly or indirectly include this file:



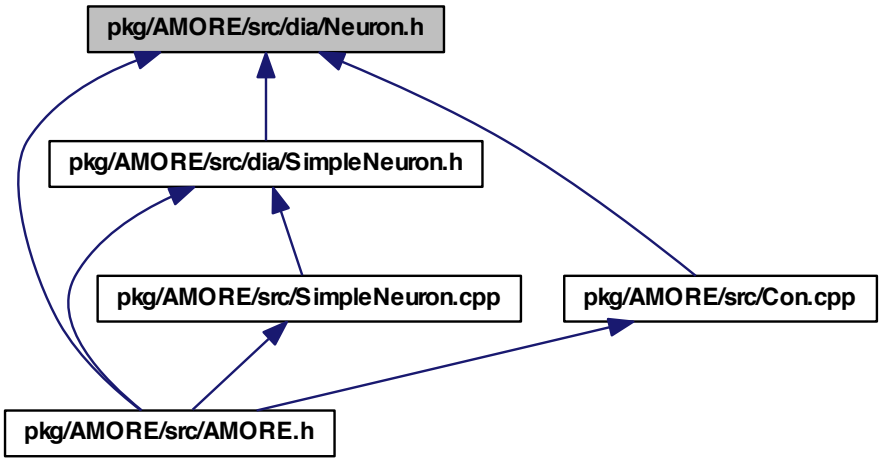

### Classes

- class NeuralFactory

  *class NeuralFactory -*

## 6.17 pkg/AMORE/src/dia/Neuron.h File Reference

This graph shows which files directly or indirectly include this file:



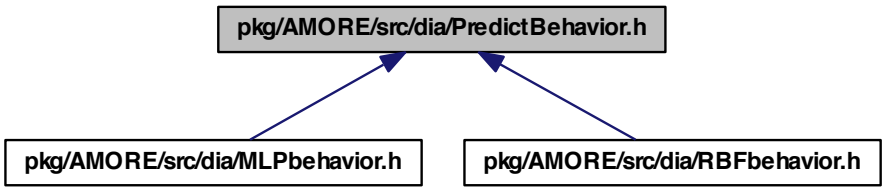

### Classes

- class Neuron

  *class Neuron -*

## 6.18 pkg/AMORE/src/dia/PredictBehavior.h File Reference

This graph shows which files directly or indirectly include this file:




### Classes

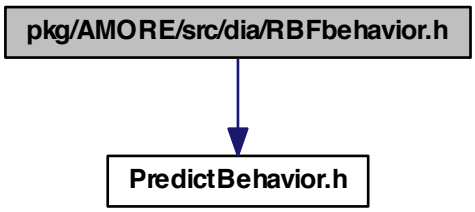
- class PredictBehavior

  *class PredictBehavior -*

## 6.19 pkg/AMORE/src/dia/RBFbehavior.h File Reference

```
#include "PredictBehavior.h"
```

Include dependency graph for RBFbehavior.h:




### Classes

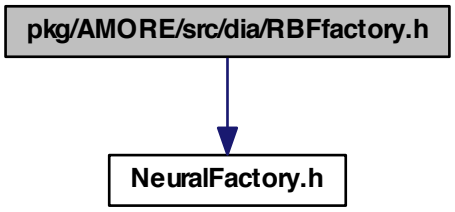
- class RBFbehavior

*class RBFbehavior -*

## 6.20 pkg/AMORE/src/dia/RBFfactory.h File Reference

```
#include "NeuralFactory.h"
```

Include dependency graph for RBFfactory.h:




### Classes

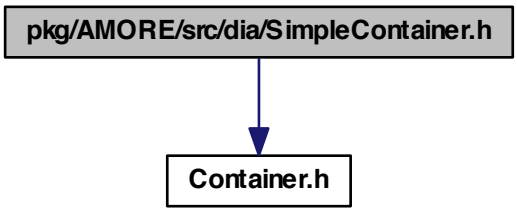
- class RBFfactory

*class RBFfactory -*

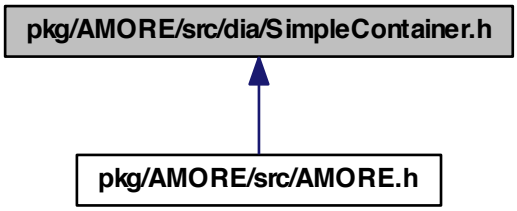
## 6.21 pkg/AMORE/src/dia/SimpleContainer.h File Reference

```
#include "Container.h"
```

Include dependency graph for SimpleContainer.h:




This graph shows which files directly or indirectly include this file:




### Classes

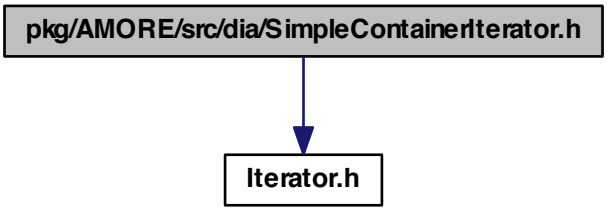
- class SimpleContainer< T >

  *class SimpleContainer -*

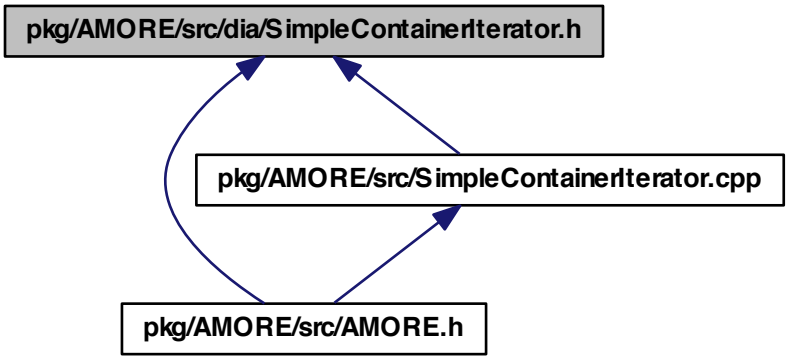
## 6.22 pkg/AMORE/src/dia/SimpleContainerIterator.h File Reference

```
#include "Iterator.h"
```

Include dependency graph for SimpleContainerIterator.h:




This graph shows which files directly or indirectly include this file:




### Classes

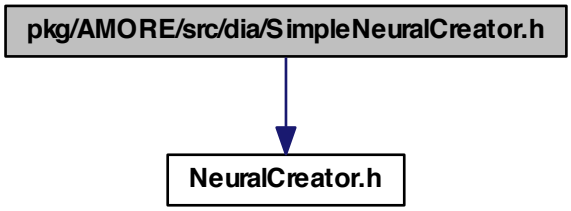
- class SimpleContainerIterator< T >

  *class SimpleContainerIterator -*

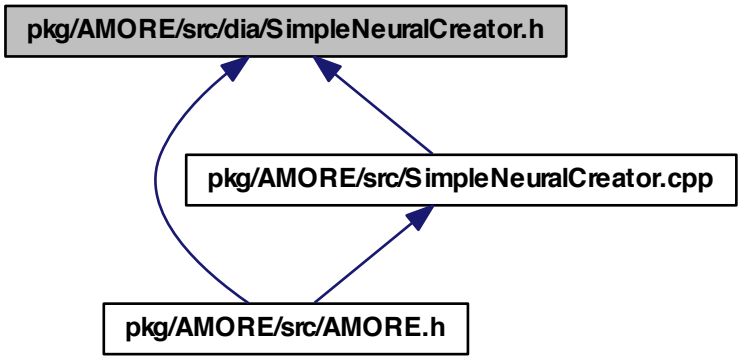
## 6.23 pkg/AMORE/src/dia/SimpleNeuralCreator.h File Reference

```
#include "NeuralCreator.h"
```

Include dependency graph for SimpleNeuralCreator.h:




This graph shows which files directly or indirectly include this file:




### Classes

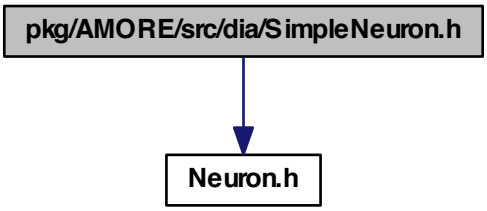
- class SimpleNeuralCreator

  *class SimpleNeuralCreator* -

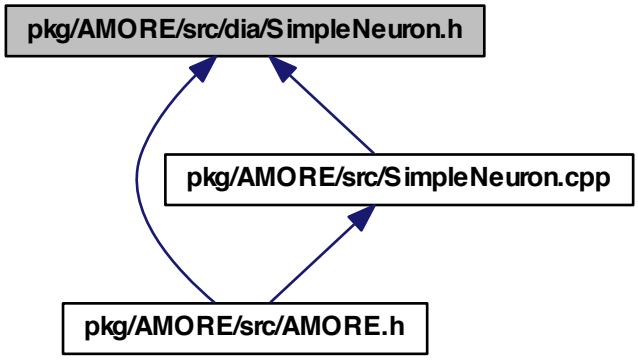
## 6.24 pkg/AMORE/src/dia/SimpleNeuron.h File Reference

```
#include "Neuron.h"
```

Include dependency graph for SimpleNeuron.h:




This graph shows which files directly or indirectly include this file:



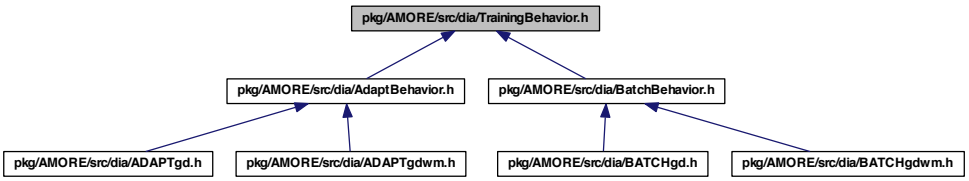

## Classes

- class SimpleNeuron

  *class SimpleNeuron -*

## 6.25 pkg/AMORE/src/dia/TrainingBehavior.h File Reference

This graph shows which files directly or indirectly include this file:




### Classes

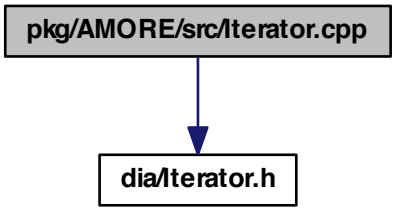
- class TrainingBehavior

  *class TrainingBehavior -*

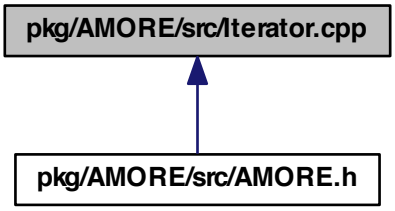
## 6.26 pkg/AMORE/src/Iterator.cpp File Reference

```
#include "dia/Iterator.h"
```

Include dependency graph for Iterator.cpp:



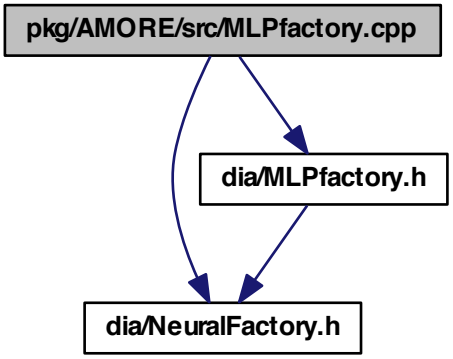
This graph shows which files directly or indirectly include this file:



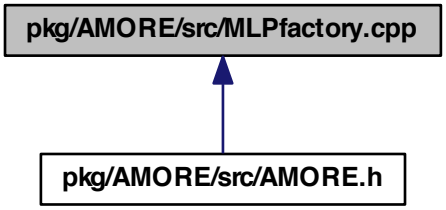

## 6.27 pkg/AMORE/src/MLPfactory.cpp File Reference

```
#include "dia/NeuralFactory.h"
#include "dia/MLPfactory.h"
```

Include dependency graph for MLPfactory.cpp:



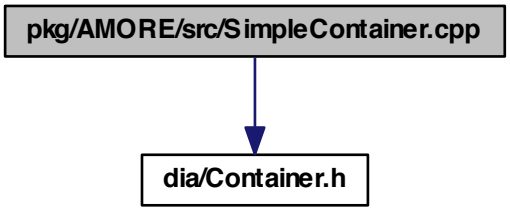
This graph shows which files directly or indirectly include this file:



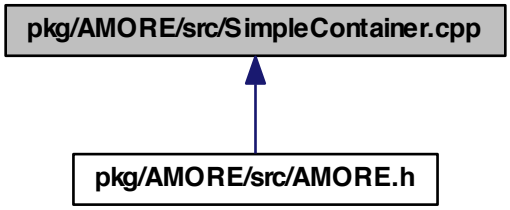

## 6.28 pkg/AMORE/src/SimpleContainer.cpp File Reference

```
#include "dia/Container.h"
```

Include dependency graph for SimpleContainer.cpp:



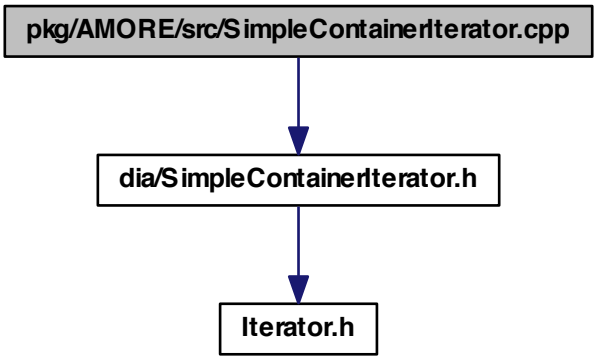
This graph shows which files directly or indirectly include this file:



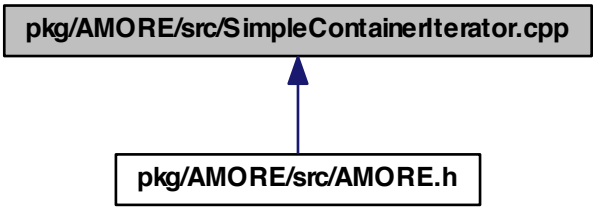

## 6.29 pkg/AMORE/src/SimpleContainerIterator.cpp File Reference

```
#include "dia/SimpleContainerIterator.h"
```

Include dependency graph for SimpleContainerIterator.cpp:



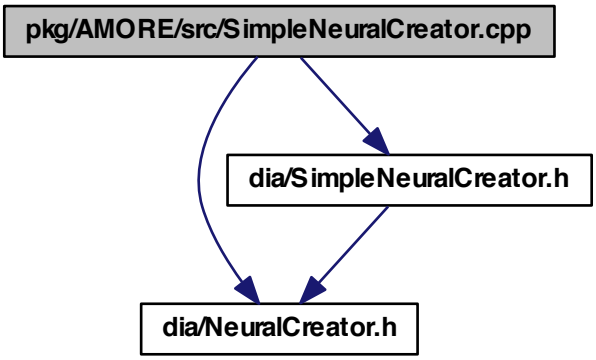
This graph shows which files directly or indirectly include this file:



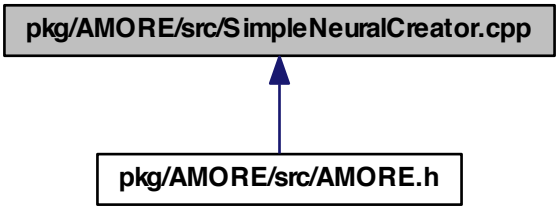

## 6.30 pkg/AMORE/src/SimpleNeuralCreator.cpp File Reference

```
#include "dia/NeuralCreator.h"
#include "dia/SimpleNeuralCreator.h"
```

Include dependency graph for SimpleNeuralCreator.cpp:



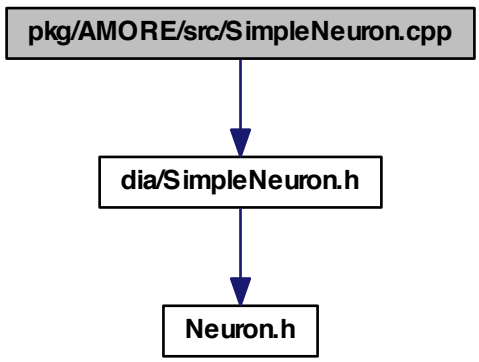
This graph shows which files directly or indirectly include this file:



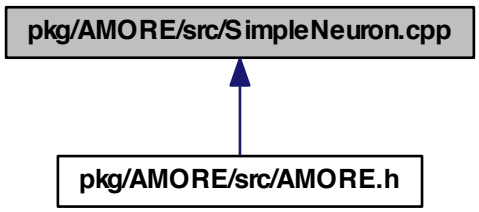

## 6.31 pkg/AMORE/src/SimpleNeuron.cpp File Reference

```
#include "dia/SimpleNeuron.h"
```

Include dependency graph for SimpleNeuron.cpp:



This graph shows which files directly or indirectly include this file:



# Index


~Container
  Container, 33
~Iterator
  Iterator, 36
~SimpleContainer
  SimpleContainer, 59
~SimpleContainerIterator
  SimpleContainerIterator, 67

AdaptBehavior, 9
  adjustParameters, 11
ADAPTgd, 12
  adjustParameters, 13
  outputDerivative, 14
ADAPTgdwm, 14
  adjustParameters, 16
  outputDerivative, 17
adjustParameters
  AdaptBehavior, 11
  ADAPTgd, 13
  ADAPTgdwm, 16
  BatchBehavior, 19
  BATCHgd, 21
  BATCHgdwm, 24
  TrainingBehavior, 78
AMORE.h
  ConContainerPtr, 81
  ConIteratorPtr, 81
  ConPtr, 81
  foreach, 80
  Handler, 81
  NeuralCreatorPtr, 81
  NeuralFactoryPtr, 81
  NeuronContainerPtr, 81
  NeuronIteratorPtr, 81
  NeuronPtr, 81
  NeuronRef, 81
  PredictBehaviorRef, 82
  size_type, 80
  TrainingBehaviorRef, 82
at
  Container, 33
  SimpleContainer, 60

BatchBehavior, 17
  adjustParameters, 19
BATCHgd, 20
  adjustParameters, 21
  outputDerivative, 22
BATCHgdwm, 22
  adjustParameters, 24
  outputDerivative, 25

clear
  Container, 33
  SimpleContainer, 61
Con, 25
  Con, 26
  d_neuron, 31
  d_weight, 31
  getNeuron, 26
  getWeight, 27
  Id, 28
  setNeuron, 29
  setWeight, 29
  show, 29
  validate, 30
ConContainerPtr
  AMORE.h, 81
ConIteratorPtr
  AMORE.h, 81
ConPtr
  AMORE.h, 81
Container, 31
  ~Container, 33
  at, 33
  clear, 33
  Container, 33
  createIterator, 34
  empty, 34
  push_back, 34
  reserve, 34

show, 34
size, 34
validate, 34
createCon
NeuralCreator, 44
SimpleNeuralCreator, 72
createIterator
Container, 34
SimpleContainer, 61
createNeuron
NeuralCreator, 44
SimpleNeuralCreator, 72
currentItem
Iterator, 36
SimpleContainerIterator, 67

d_accumulator
MLPbehavior, 39
RBFbehavior, 53
d_altitude
RBFbehavior, 53
d_bias
MLPbehavior, 39
d_collection
SimpleContainer, 64
d_container
SimpleContainerIterator, 69
d_current
SimpleContainerIterator, 69
d_Id
SimpleNeuron, 77
d_nCons
MLPbehavior, 39
RBFbehavior, 53
d_neuron
Con, 31
d_output
MLPbehavior, 39
RBFbehavior, 53
d_weight
Con, 31
d_width
RBFbehavior, 53

empty
Container, 34
SimpleContainer, 61

first
Iterator, 36
SimpleContainerIterator, 68
foreach
AMORE.h, 80

getId
Neuron, 48
SimpleNeuron, 75
getNeuron
Con, 26
getWeight
Con, 27

Handler
AMORE.h, 81

Id
Con, 28
isDone
Iterator, 36
SimpleContainerIterator, 68
Iterator, 35
∼Iterator, 36
currentItem, 36
first, 36
isDone, 36
Iterator, 36
next, 36

makeCon
MLPfactory, 42
NeuralFactory, 46
RBFfactory, 56
makeConContainer
MLPfactory, 42
NeuralFactory, 46
RBFfactory, 56
makeNeuron
MLPfactory, 42
NeuralFactory, 46
RBFfactory, 56
makeNeuronContainer
MLPfactory, 43
NeuralFactory, 47
RBFfactory, 56
MLPbehavior, 37
d_accumulator, 39
d_bias, 39
d_nCons, 39
d_output, 39
predict, 39

MLPfactory, 40
makeCon, 42
makeConContainer, 42
makeNeuron, 42
makeNeuronContainer, 43
MLPfactory, 42

NeuralCreator, 43
createCon, 44
createNeuron, 44
NeuralCreatorPtr
AMORE.h, 81
NeuralFactory, 45
makeCon, 46
makeConContainer, 46
makeNeuron, 46
makeNeuronContainer, 47
NeuralFactoryPtr
AMORE.h, 81
Neuron, 47
getId, 48
setId, 48
show, 49
validate, 49
NeuronContainerPtr
AMORE.h, 81
NeuronIteratorPtr
AMORE.h, 81
NeuronPtr
AMORE.h, 81
NeuronRef
AMORE.h, 81
next
Iterator, 36
SimpleContainerIterator, 68

outputDerivative
ADAPTgd, 14
ADAPTgdwm, 17
BATCHgd, 22
BATCHgdwm, 25

pkg/AMORE/src/AMORE.h, 79
pkg/AMORE/src/Con.cpp, 82
pkg/AMORE/src/Container.cpp, 83
pkg/AMORE/src/dia/AdaptBehavior.h, 84
pkg/AMORE/src/dia/ADAPTgd.h, 85
pkg/AMORE/src/dia/ADAPTgdwm.h, 86
pkg/AMORE/src/dia/BatchBehavior.h, 86
pkg/AMORE/src/dia/BATCHgd.h, 87
pkg/AMORE/src/dia/BATCHgdwm.h, 88
pkg/AMORE/src/dia/Con.h, 90
pkg/AMORE/src/dia/Container.h, 90
pkg/AMORE/src/dia/Iterator.h, 91
pkg/AMORE/src/dia/MLPbehavior.h, 91
pkg/AMORE/src/dia/MLPfactory.h, 92
pkg/AMORE/src/dia/NeuralCreator.h, 94
pkg/AMORE/src/dia/NeuralFactory.h, 95
pkg/AMORE/src/dia/Neuron.h, 96
pkg/AMORE/src/dia/PredictBehavior.h, 97
pkg/AMORE/src/dia/RBFbehavior.h, 97
pkg/AMORE/src/dia/RBFfactory.h, 98
pkg/AMORE/src/dia/SimpleContainer.h, 98
pkg/AMORE/src/dia/SimpleContainerIterator.h, 99
pkg/AMORE/src/dia/SimpleNeuralCreator.h, 100
pkg/AMORE/src/dia/SimpleNeuron.h, 101
pkg/AMORE/src/dia/TrainingBehavior.h, 103
pkg/AMORE/src/Iterator.cpp, 103
pkg/AMORE/src/MLPfactory.cpp, 104
pkg/AMORE/src/SimpleContainer.cpp, 105
pkg/AMORE/src/SimpleContainerIterator.cpp, 106
pkg/AMORE/src/SimpleNeuralCreator.cpp, 107
pkg/AMORE/src/SimpleNeuron.cpp, 108
predict
MLPbehavior, 39
PredictBehavior, 50
RBFbehavior, 53
PredictBehavior, 49
predict, 50
PredictBehaviorRef
AMORE.h, 82
push_back
Container, 34
SimpleContainer, 61

RBFbehavior, 50
d_accumulator, 53
d_altitude, 53
d_nCons, 53
d_output, 53
d_width, 53
predict, 53
RBFfactory, 54
makeCon, 56
makeConContainer, 56
makeNeuron, 56

makeNeuronContainer, 56
RBFfactory, 56
reserve
Container, 34
SimpleContainer, 62

setId
Neuron, 48
SimpleNeuron, 75
setNeuron
Con, 29
setWeight
Con, 29
show
Con, 29
Container, 34
Neuron, 49
SimpleContainer, 62
SimpleNeuron, 76
SimpleContainer, 56
∼SimpleContainer, 59
at, 60
clear, 61
createIterator, 61
d_collection, 64
empty, 61
push_back, 61
reserve, 62
show, 62
SimpleContainer, 59
SimpleContainerIterator< T >, 64
size, 63
validate, 63
SimpleContainer< T >
SimpleContainerIterator, 69
SimpleContainerIterator, 64
∼SimpleContainerIterator, 67
currentItem, 67
d_container, 69
d_current, 69
first, 68
isDone, 68
next, 68
SimpleContainer< T >, 69
SimpleContainerIterator, 67
SimpleContainerIterator< T >
SimpleContainer, 64
SimpleNeuralCreator, 69
createCon, 72
createNeuron, 72
SimpleNeuralCreator, 71
SimpleNeuron, 73
d_Id, 77
getId, 75
setId, 75
show, 76
SimpleNeuron, 75
validate, 76
size
Container, 34
SimpleContainer, 63
size_type
AMORE.h, 80

TrainingBehavior, 77
adjustParameters, 78
TrainingBehaviorRef
AMORE.h, 82

validate
Con, 30
Container, 34
Neuron, 49
SimpleContainer, 63
SimpleNeuron, 76