AMIDSTtoolbox

Generated by Doxygen 1.8.8

Thu Nov 20 2014 15:24:30

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3.1 Class List

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Chapter 4

Namespace Documentation

4.1 Package eu.amidst.core.database

Packages

- package filereaders

Classes

- class Attribute
- class Attributes
- interface DataInstance
- interface DataOnDisk
- interface DataOnMemory
- interface DataOnStream

4.1.1 Detailed Description

ISSUE LIST **********

1. The number of states should be parsed and stored.

********** ISSUE LIST **********

1. (Andres) Add a "close" method to close the possible linked file or whatever.

4.2 Package eu.amidst.core.database.filereaders

Classes

- interface DataFileReader
- interface DataRow
- class DataRowMissing
- class DynamicDataInstance
- class DynamicDataOnDiskFromFile
- class DynamicDataOnMemoryFromFile
- class NextDynamicDataInstance

- class StaticDataInstance
- class StaticDataOnDiskFromFile
- class StaticDataOnMemoryFromFile

4.2.1 Detailed Description

ISSUE LIST **********

1. We could eliminate the if(timeIDcounter == 1) in nextDataInstance_NoTimeID_NoSeq if we maintain a future DataRow (we read an extra row in advance). Then we would need the method public boolean isNull(){ return (present==null || past==null); }

4.3 Package eu.amidst.core.distribution

Classes

- class ConditionalDistribution
- class Distribution
- class DistributionBuilder
- class Multinomial
- class Multinomial_MultinomialParents
- class Normal
- class Normal_MultinomialNormalParents
- class Normal_MultinomialParents
- class Normal_NormalParents
- class UnivariateDistribution

4.3.1 Detailed Description

ISSUE LIST **********

1. In general, should we clone attributes in the constructor to avoid bad uses of input variables later on?
2. How are we going to update the probabilities? Value by value? Or directly with the whole set of probabilities? or both? Two methods are included: setProbabilities(double[] probabilities) and setProbabilityOfState(int index, double value)
3. Is needed the method setProbabilityOfState ?

********** ISSUE LIST **********

1. getConditioningVariables change to getParentsVariables()

ISSUE LIST **********

1. Do we need here the min and max of the variable, for instance, to check that the input value in compute↩ ProbabilityOf(value) is in the range [min,max]?

ISSUES **********

1. CODING: - this.multinomialParents or multinomialParents? Common criteria.

```
   - methods are ordered? alphabetically?
```

ISSUE LIST **********

1. In the constructor, should we initialize the CLG attributes in this way?
2. The name of the method computeProbabilityOf(..) is a bit confusing for continuous domains. It does not compute probabilities but the value for the density function which is not a probability. However as this class implements this method of ConditionalDistribution, we could leave like this.
3. QAPlug gives a warning when using the same name for a attribute and a given argument, e.g. this.var = var

4.4 Package eu.amidst.core.exponentialfamily

Classes

- class EF_BaseDistribution_MultinomialParents< E extends EF_Distribution >
- class EF_ConditionalDistribution
- class EF_Distribution
- class EF_DistributionBuilder
- class EF_Multinomial
- class EF_Normal
- class EF_UnivariateDistribution
- class MomentParameters
- class NaturalParameters
- class SufficientStatistics

4.4.1 Detailed Description

********** ISSUE LIST **********

1. getConditioningVariables change to getParentsVariables()

ISSUE LIST **********

1. Make SufficientStatics an static class to avoid the creation of an object in each call to getSuffStatistics();
2. Make naturalParameters and momentParameters statics?

4.5 Package eu.amidst.core.variables

Classes

- class Assignment
- enum DistType
- class DynamicVariables
- enum StateSpaceType
- class StaticVariables
- interface Variable
- class VariableBuilder

4.5.1 Detailed Description

ISSUE LIST **********

1. Rename to DynamicVariables
2. We can/should remove all setters from VariableImplementation right?
3. Is there any need for the field atts? It is only used in the constructor.
4. If the fields in VariableImplementation are all objects then the TemporalClone only contains pointers, which would ensure consistency, although we are not planing to modify these values.

Chapter 5

Class Documentation

5.1 eu.amidst.core.database.filereaders.arffFileReader.ArffDataStream Class Reference

5.1.1 Detailed Description

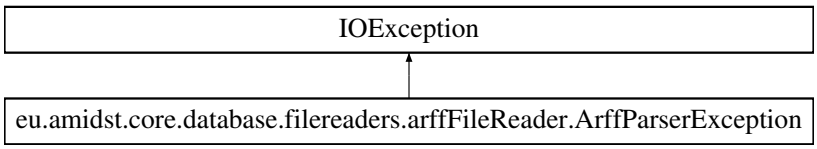
Created by sigveh on 10/7/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/arffFileReader/ArffData↩ Stream.java

5.2 eu.amidst.core.database.filereaders.arffFileReader.ArffParserException Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.arffFileReader.ArffParserException:



Public Member Functions

- **ArffParserException** (String message)

5.2.1 Detailed Description

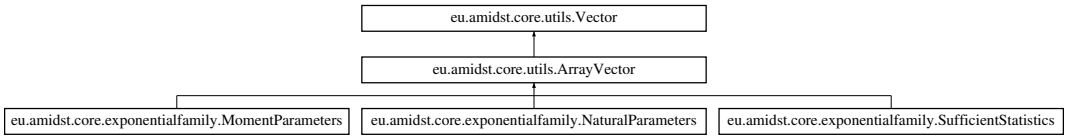
Created by sigveh on 10/8/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/arffFileReader/ArffParser↩ Exception.java

5.3 eu.amidst.core.utils.ArrayVector Class Reference

Inheritance diagram for eu.amidst.core.utils.ArrayVector:



Public Member Functions

- **ArrayVector** (int size)
- **ArrayVector** (double[] vec)
- double **get** (int i)
- void **set** (int i, double val)
- int **size** ()

Additional Inherited Members

5.3.1 Detailed Description

Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/utils/ArrayVector.java

5.4 eu.amidst.core.variables.Assignment Class Reference

Public Member Functions

- **Assignment** (int nOfVars)
- double **getValue** (Variable key)
- void **setValue** (Variable var, Double value)
- Set< Map.Entry< Variable, Double > > **entrySet** ()

5.4.1 Detailed Description

Created by ana@cs.aau.dk on 03/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/Assignment.java

5.5 eu.amidst.core.database.Attribute Class Reference

Public Member Functions

- **Attribute** (int index, String name, String unit, StateSpaceType stateSpaceType, int numberOfStates)

- **Attribute** (int index, String name, StateSpaceType stateSpaceType, int numberOfStates)
- **Attribute** (String name, StateSpaceType stateSpaceType, int numberOfStates)
- int **getIndex** ()
- String **getUnit** ()
- String **getName** ()
- StateSpaceType **getStateSpaceType** ()
- int **getNumberOfStates** ()
- boolean **equals** (Object o)
- int **hashCode** ()

5.5.1 Detailed Description

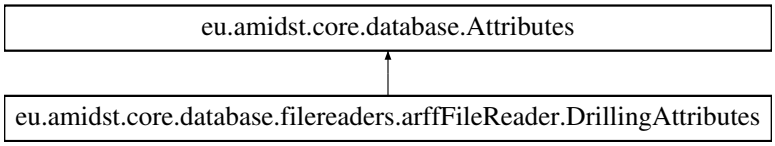
Created by sigveh on 10/20/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/Attribute.java

5.6 eu.amidst.core.database.Attributes Class Reference

Inheritance diagram for eu.amidst.core.database.Attributes:



Public Member Functions

- **Attributes** (List< Attribute > attributes)
- List< Attribute > **getList** ()
- List< Attribute > **getListExceptTimeAndSeq** ()
- void **print** ()
- Attribute **getAttributeByName** (String name)

5.6.1 Detailed Description

Created by sigveh on 10/16/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/Attributes.java

5.7 eu.amidst.core.modelstructure.BayesianNetwork Class Reference

Public Member Functions

- void **setDistribution** (Variable var, ConditionalDistribution distribution)
- int **getNumberOfVars** ()
- StaticVariables **getStaticVariables** ()
- DAG **getDAG** ()
- List< Variable > **getVariables** ()

Static Public Member Functions

- static BayesianNetwork **newBayesianNetwork** (DAG dag)

5.7.1 Detailed Description

Created by afa on 02/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/modelstructure/BayesianNetwork.java

5.8 eu.amidst.core.database.dynamics.BucketSequenceData Interface Reference

Public Member Functions

- int **getMarkovOrder** ()
- boolean **hasMoreData** ()
- DynamicDataInstance **nextSequenceData** ()
- boolean **isReseteable** ()
- void **reset** ()

5.8.1 Detailed Description

Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/dynamics/BucketSequenceData.java

5.9 eu.amidst.core.database.dynamics.BucketSequenceStream Interface Reference

Public Member Functions

- Attributes **getDynamicAttributes** ()
- int **getMarkovOrder** ()
- boolean **hasMoreData** ()
- BucketSequenceData **nextBucketSequenceData** ()
- boolean **isReseteable** ()
- void **reset** ()

5.9.1 Detailed Description

Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/dynamics/BucketSequenceStream.java

5.10 eu.amidst.staticmodelling.models.Classifier Interface Reference

Public Member Functions

- double[ ] **predict** (DataInstance instance)
- int **getClassVarID** ()
- void **setClassVarID** (int varID)

5.10.1 Detailed Description

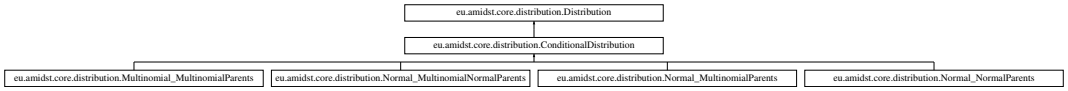
Created by afa on 02/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/staticmodelling/models/Classifier.java

5.11 eu.amidst.core.distribution.ConditionalDistribution Class Reference

Inheritance diagram for eu.amidst.core.distribution.ConditionalDistribution:



Public Member Functions

- List< Variable > getConditioningVariables ()
- double getConditionalProbability (Assignment assignment)
- abstract double getLogConditionalProbability (Assignment assignment)

Protected Attributes

- List< Variable > parents

5.11.1 Detailed Description

This interface generalizes the set of possible conditional distributions.

Author

Antonio Fernández

Version

1.0

Since

2014-11-3

5.11.2 Member Function Documentation

5.11.2.1 double eu.amidst.core.distribution.ConditionalDistribution.getConditionalProbability (Assignment *assignment*)

Evaluates the conditional distribution given a value of the variable and an assignment of the parents.

Parameters

assignment	An `Assignment` for the parents.

Returns

A `double` value with the evaluated distribution.

5.11.2.2 List<Variable> eu.amidst.core.distribution.ConditionalDistribution.getConditioningVariables ( )

Gets the set of conditioning variables

Returns

An `unmodifiable List` object with the set of conditioning variables.

5.11.2.3 abstract double eu.amidst.core.distribution.ConditionalDistribution.getLogConditionalProbability (Assignment *assignment*) [abstract]

Evaluates the conditional distribution given a value of the variable and an assignment of the parents.

Parameters

assignment	An `Assignment` for the parents.

Returns

A `double` value with the logarithm of the evaluated distribution.

5.11.3 Member Data Documentation

5.11.3.1 List<Variable> eu.amidst.core.distribution.ConditionalDistribution.parents [protected]

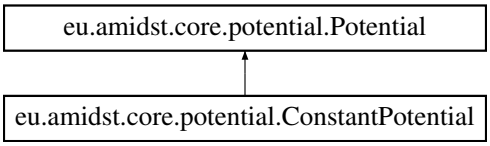
The list of parents of the variable

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/ConditionalDistribution.java

5.12 eu.amidst.core.potential.ConstantPotential Class Reference

Inheritance diagram for eu.amidst.core.potential.ConstantPotential:



Public Member Functions

- **ConstantPotential** (double val)
- void **setVariables** (List variables)
- List **getVariables** ()
- void **combine** (Potential pot)
- void **marginalize** (List variables)

5.12.1 Detailed Description

Created by andresmasegosa on 28/08/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/potential/ConstantPotential.java

5.13 eu.amidst.core.huginlink.ConverterToAMIDST Class Reference

Public Member Functions

- **ConverterToAMIDST** (Domain huginNetwork)
- BayesianNetwork **getAmidstNetwork** ()
- void **setNodes** ()
- void **setStructure** ()
- void **setMultinomial_MultinomialParents** (Node huginVar)
- void **setDistributions** (NodeList huginNodes)

5.13.1 Detailed Description

Created by afa on 14/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/huginlink/ConverterToAMIDST.java

5.14 eu.amidst.core.huginlink.ConverterToHugin Class Reference

Public Member Functions

- Domain **getHuginNetwork** ()
- void **setNodes** (List< Variable > amidstVars)
- void **setStructure** (DAG dag)
- void **setMultinomial_MultinomialParents** (ConditionalDistribution dist)
- void **setNormal_NormalParents** (ConditionalDistribution dist, int assign_i)
- void **setNormal** (Normal dist, int i)
- void **setNormal_MultinomialParents** (ConditionalDistribution dist)
- void **setNormal_MultinomialNormalParents** (ConditionalDistribution dist)
- void **setDistributions** (BayesianNetwork bn)
- void **setBayesianNetwork** (BayesianNetwork bn)

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/huginlink/ConverterToHugin.java

5.15 eu.amidst.core.modelstructure.DAG Class Reference

Public Member Functions

- **DAG** (StaticVariables variables)
- StaticVariables **getVariables** ()
- ParentSet **getParentSet** (Variable var)
- boolean **containCycles** ()

5.15.1 Detailed Description

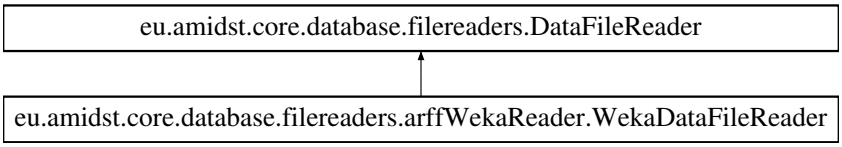
Created by Hanen on 13/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/modelstructure/DAG.java

5.16 eu.amidst.core.database.filereaders.DataFileReader Interface Reference

Inheritance diagram for eu.amidst.core.database.filereaders.DataFileReader:



Public Member Functions

- Attributes **getAttributes** ()
- DataRow **nextDataRow** ()
- boolean **hasMoreDataRows** ()
- void **reset** ()
- boolean **doesItReadThisFileExtension** (String fileExtension)

5.16.1 Detailed Description

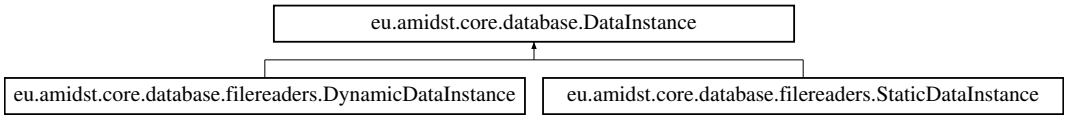
Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/DataFileReader.java

5.17 eu.amidst.core.database.DataInstance Interface Reference

Inheritance diagram for eu.amidst.core.database.DataInstance:



Public Member Functions

- double **getValue** (Variable var)
- int **getSequenceID** ()
- int **getTimeID** ()

5.17.1 Detailed Description

Created by ana@cs.aau.dk on 10/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/DataInstance.java

5.18 eu.amidst.core.database.DataOnDisk Interface Reference

Inheritance diagram for eu.amidst.core.database.DataOnDisk:

Public Member Functions

- DataInstance **nextDataInstance** ()
- boolean **hasMoreDataInstances** ()
- Attributes **getAttributes** ()
- void **restart** ()

5.18.1 Detailed Description

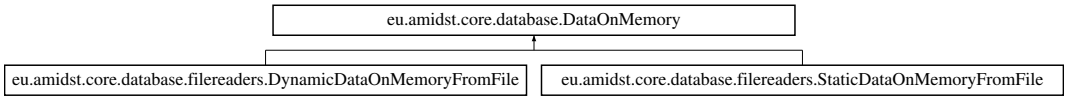
Created by afa on 02/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/DataOnDisk.java

5.19 eu.amidst.core.database.DataOnMemory Interface Reference

Inheritance diagram for eu.amidst.core.database.DataOnMemory:



Public Member Functions

- int **getNumberOfDataInstances** ()
- DataInstance **getDataInstance** (int i)
- Attributes **getAttributes** ()

5.19.1 Detailed Description

Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/DataOnMemory.java

5.20 eu.amidst.core.database.DataOnStream Interface Reference

Inheritance diagram for eu.amidst.core.database.DataOnStream:

Public Member Functions

- DataInstance **nextDataInstance** ()
- boolean **hasMoreDataInstances** ()
- Attributes **getAttributes** ()

5.20.1 Detailed Description

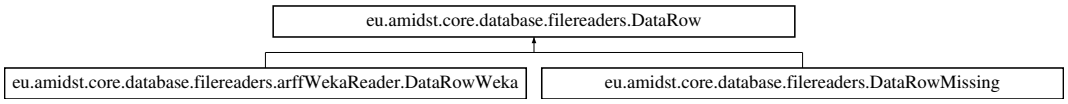
Created by afa on 02/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/DataOnStream.java

5.21 eu.amidst.core.database.filereaders.DataRow Interface Reference

Inheritance diagram for eu.amidst.core.database.filereaders.DataRow:



Public Member Functions

- double **getValue** (Attribute att)

5.21.1 Detailed Description

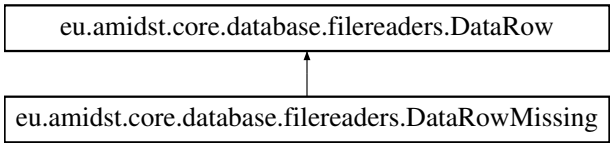
Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/DataRow.java

5.22 eu.amidst.core.database.filereaders.DataRowMissing Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.DataRowMissing:



Public Member Functions

- double **getValue** (Attribute att)

5.22.1 Detailed Description

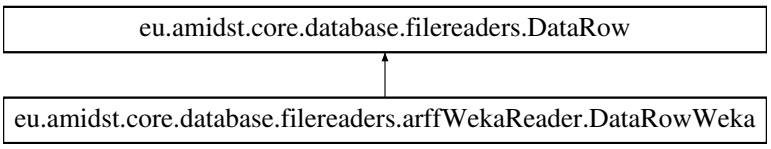
Created by ana@cs.aau.dk on 13/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/DataRowMissing.java

5.23 eu.amidst.core.database.filereaders.arffWekaReader.DataRowWeka Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.arffWekaReader.DataRowWeka:



Public Member Functions

- **DataRowWeka** (Instance dataRow)
- double **getValue** (Attribute att)

5.23.1 Detailed Description

Created by ana@cs.aau.dk on 14/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/arffWekaReader/DataRow↩ Weka.java

5.24 eu.amidst.core.distribution.Distribution Class Reference

Inheritance diagram for eu.amidst.core.distribution.Distribution:

Public Member Functions

- Variable getVariable ()

Protected Attributes

- Variable var

5.24.1 Detailed Description

Created by afa on 12/11/14.

5.24.2 Member Function Documentation

5.24.2.1 Variable eu.amidst.core.distribution.Distribution.getVariable ( )

Gets the variable of the distribution

Returns

A `Variable` object.

5.24.3 Member Data Documentation

5.24.3.1 Variable eu.amidst.core.distribution.Distribution.var [protected]

The variable of the distribution

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Distribution.java

5.25 eu.amidst.core.distribution.DistributionBuilder Class Reference

Static Public Member Functions

- static ConditionalDistribution **newDistribution** (Variable mainVar, List< Variable > conditioningVars)

5.25.1 Detailed Description

Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/DistributionBuilder.java

5.26 eu.amidst.core.variables.DistType Enum Reference

Public Attributes

- **MULTINOMIAL**

5.26.1 Detailed Description

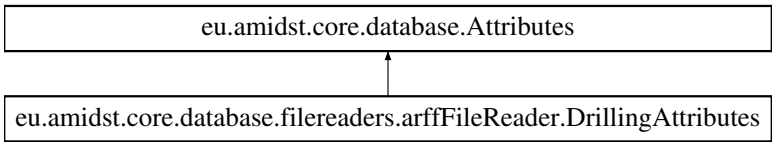
Created by Hanen on 05/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/DistType.java

5.27 eu.amidst.core.database.filereaders.arffFileReader.DrillingAttributes Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.arffFileReader.DrillingAttributes:



Public Member Functions

- Attribute **getMFI** ()
- Attribute **getRPM** ()
- Attribute **getSPP** ()
- List< Attribute > **getList** ()
- void **print** ()
- Attribute **getAttributeByName** (String name)

5.27.1 Detailed Description

Created by sigveh on 10/16/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/arffFileReader/Drilling↩ Attributes.java

5.28 eu.amidst.core.modelstructure.DynamicBayesianNetwork Class Reference

Public Member Functions

- void initializeDistributions ()
- int **getNumberOfNodes** ()
- DynamicVariables **getDynamicVariables** ()
- Variable **getVariableById** (int varID)
- Variable **getTemporalCloneById** (int varID)
- Variable **getTemporalCloneFromVariable** (Variable variable)
- ParentSet **getParentSetTimeT** (Variable var)
- Distribution **getDistributionTimeT** (Variable var)
- ParentSet **getParentSetTime0** (Variable var)
- Distribution **getDistributionTime0** (Variable var)

Static Public Member Functions

- static DynamicBayesianNetwork newDynamicBayesianNetwork (DynamicVariables variables)

5.28.1 Detailed Description

This class implements a dynamic Bayesian network.

Author

afalvarez@ual.es, andres@cs.aau.dk & ana@cs.aau.dk

Version

1.0

Since

2014-07-3

5.28.2 Member Function Documentation

5.28.2.1 void eu.amidst.core.modelstructure.DynamicBayesianNetwork.initializeDistributions ( )

Initialize the Distributions of the variables based on their `StateSpaceType`

5.28.2.2 static DynamicBayesianNetwork eu.amidst.core.modelstructure.DynamicBayesianNetwork.newDynamic↩ BayesianNetwork (DynamicVariables *variables*) [static]

The class public constructor, as a factory pattern

Parameters

variables	The variables or list of variables

Returns

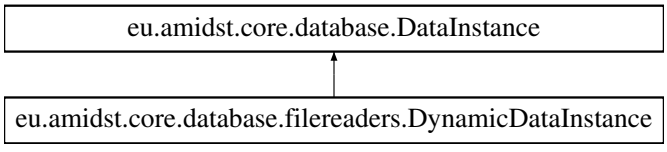
A `DynamicBayesianNetwork` with the given list of variables

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/modelstructure/DynamicBayesianNetwork.java

5.29 eu.amidst.core.database.filereaders.DynamicDataInstance Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.DynamicDataInstance:



Public Member Functions

- **DynamicDataInstance** (DataRow dataRowPast_, DataRow dataRowPresent_, int sequenceID_, int timeI↩ D_)
- double **getValue** (Variable var)
- int **getSequenceID** ()
- int **getTimeID** ()

5.29.1 Detailed Description

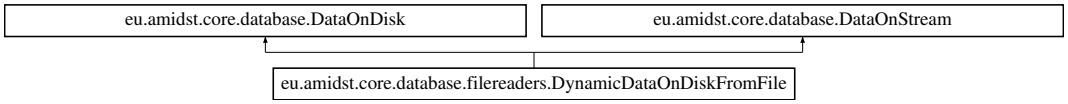
Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/DynamicDataInstance.java

5.30 eu.amidst.core.database.filereaders.DynamicDataOnDiskFromFile Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.DynamicDataOnDiskFromFile:



Public Member Functions

- DynamicDataOnDiskFromFile (DataFileReader reader)
- DataInstance **nextDataInstance** ()
- boolean **hasMoreDataInstances** ()
- Attributes **getAttributes** ()
- void **restart** ()

5.30.1 Detailed Description

Created by ana@cs.aau.dk on 12/11/14.

5.30.2 Constructor & Destructor Documentation

5.30.2.1 eu.amidst.core.database.filereaders.DynamicDataOnDiskFromFile.DynamicDataOnDiskFromFile (DataFileReader *reader*)

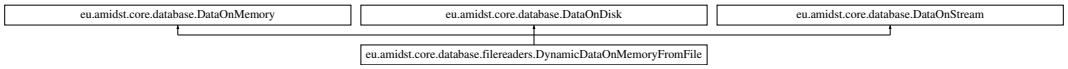
We read the two first rows now, to create the first couple in nextDataInstance

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/DynamicDataOnDiskFrom↩ File.java

5.31 eu.amidst.core.database.filereaders.DynamicDataOnMemoryFromFile Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.DynamicDataOnMemoryFromFile:



Public Member Functions

- **DynamicDataOnMemoryFromFile** (DataFileReader reader)
- int **getNumberOfDataInstances** ()
- DataInstance **getDataInstance** (int i)
- Attributes **getAttributes** ()
- DataInstance **nextDataInstance** ()
- boolean **hasMoreDataInstances** ()
- void **restart** ()

5.31.1 Detailed Description

Created by ana@cs.aau.dk on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/DynamicDataOnMemory↩ FromFile.java

5.32 eu.amidst.core.variables.DynamicVariables Class Reference

Public Member Functions

- **DynamicVariables** (Attributes atts)
- DynamicVariables (Attributes atts, HashMap< Attribute, DistType > typeDists)
- Variable **getTemporalCloneFromVariable** (Variable var)
- Variable **getVariableFromTemporalClone** (Variable var)
- Variable **addHiddenVariable** (VariableBuilder builder)
- List< Variable > **getVariables** ()
- List< Variable > **getTemporalClones** ()
- Variable **getVariableById** (int varID)
- Variable **getTemporalCloneById** (int varID)
- Variable **getVariableByName** (String name)
- Variable **getTemporalCloneByName** (String name)
- int **getNumberOfVars** ()

5.32.1 Detailed Description

Created by afa on 02/07/14.

5.32.2 Constructor & Destructor Documentation

5.32.2.1 eu.amidst.core.variables.DynamicVariables.DynamicVariables (Attributes *atts*, HashMap< Attribute, DistType > *typeDists*)

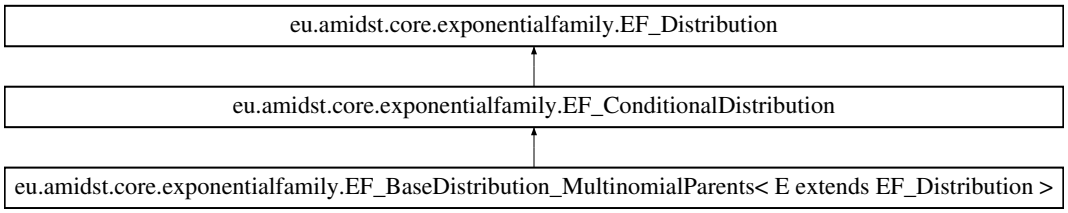
Constructor where the distribution type of random variables is provided as an argument.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/DynamicVariables.java

5.33 eu.amidst.core.exponentialfamily.EF_BaseDistribution_MultinomialParents< E extends EF_Distribution > Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.EF_BaseDistribution_MultinomialParents< E extends EF_Distribution >:



Public Member Functions

- **EF_BaseDistribution_MultinomialParents** (Variable var, List< Variable > parents)
- abstract E **createNewBaseDistribution** (Variable var, List< Variable > non_multinomialParents)
- void **setEF_BaseDistribution** (int indexMultinomial, E baseDist)
- E **getEF_BaseDistribution** (int indexMultinomial)
- E **getEF_BaseDistribution** (DataInstance dataInstance)
- SufficientStatistics **getSufficientStatistics** (DataInstance instance)
- int **sizeOfSufficientStatistics** ()
- void **setNaturalParameters** (NaturalParameters parameters)
- void **setMomentParameters** (MomentParameters parameters)
- void **updateNaturalFromMomentParameters** ()
- void **updateMomentFromNaturalParameters** ()
- double **computeLogBaseMeasure** (DataInstance dataInstance)
- double **computeLogNormalizer** (NaturalParameters parameters)

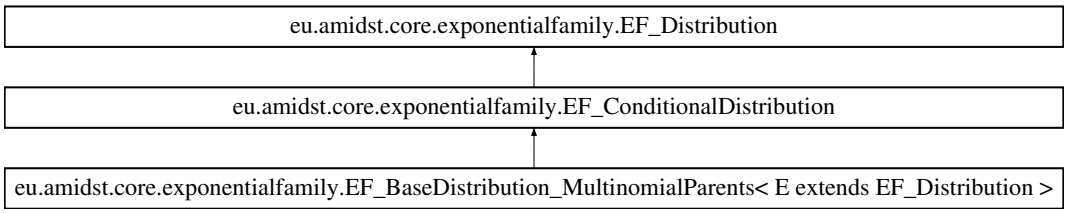
Additional Inherited Members

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_BaseDistribution_MultinomialParents.java

5.34 eu.amidst.core.exponentialfamily.EF_ConditionalDistribution Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.EF_ConditionalDistribution:



Public Member Functions

- List< Variable > **getConditioningVariables** ()

Protected Attributes

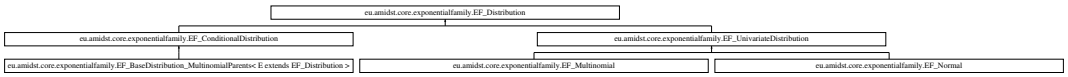
- List< Variable > **parents**

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_ConditionalDistribution.java

5.35 eu.amidst.core.exponentialfamily.EF_Distribution Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.EF_Distribution:



Public Member Functions

- final Variable getVariable ()
- final NaturalParameters **getNaturalParameters** ()
- final MomentParameters **getMomentParameters** ()
- void **setNaturalParameters** (NaturalParameters parameters)
- void **setMomentParameters** (MomentParameters parameters)
- abstract void **updateNaturalFromMomentParameters** ()
- abstract void **updateMomentFromNaturalParameters** ()
- abstract SufficientStatistics **getSufficientStatistics** (DataInstance data)
- abstract int **sizeOfSufficientStatistics** ()
- abstract double **computeLogBaseMeasure** (DataInstance dataInstance)
- abstract double **computeLogNormalizer** ()
- double **computeProbabilityOf** (DataInstance dataInstance)
- double **computeLogProbabilityOf** (DataInstance dataInstance)

Protected Attributes

- Variable var
- NaturalParameters **naturalParameters**
- MomentParameters **momentParameters**

5.35.1 Detailed Description

Created by andresmasegosa on 13/11/14.

5.35.2 Member Function Documentation

5.35.2.1 final Variable eu.amidst.core.exponentialfamily.EF_Distribution.getVariable ( )

Gets the variable of the distribution

Returns

A `Variable` object.

5.35.3 Member Data Documentation

5.35.3.1 Variable eu.amidst.core.exponentialfamily.EF_Distribution.var [protected]

The variable of the distribution

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_Distribution.java

5.36 eu.amidst.core.exponentialfamily.EF_DistributionBuilder Class Reference

Static Public Member Functions

- static EF_BaseDistribution_MultinomialParents **newEFFromConditionalDistribution** (Multinomial_MultinomialParents dist)
- static EF_Normal **toEFDistribution** (Normal dist)
- static Normal **toDistribution** (EF_Normal ef_normal)
- static EF_Multinomial **toEFDistribution** (Multinomial dist)
- static Multinomial **toDistribution** (EF_Multinomial ef_multinomial)

5.36.1 Detailed Description

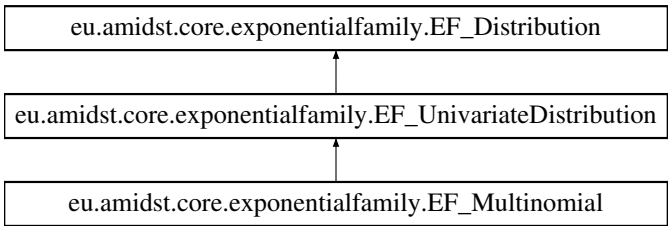
Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_DistributionBuilder.java

5.37 eu.amidst.core.exponentialfamily.EF_Multinomial Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.EF_Multinomial:



Public Member Functions

- EF_Multinomial (Variable var_)
- double **computeLogBaseMeasure** (double val)
- double **computeLogNormalizer** ()
- SufficientStatistics **getSufficientStatistics** (double val)
- void **updateNaturalFromMomentParameters** ()
- void **updateMomentFromNaturalParameters** ()
- int **sizeOfSufficientStatistics** ()

Static Public Member Functions

- static SufficientStatistics **sufficientStatistics** (int nstates, double val)

Additional Inherited Members

5.37.1 Detailed Description

Created by andresmasegosa on 13/11/14.

5.37.2 Constructor & Destructor Documentation

5.37.2.1 eu.amidst.core.exponentialfamily.EF_Multinomial.EF_Multinomial (Variable *var_*)

The class constructor.

Parameters

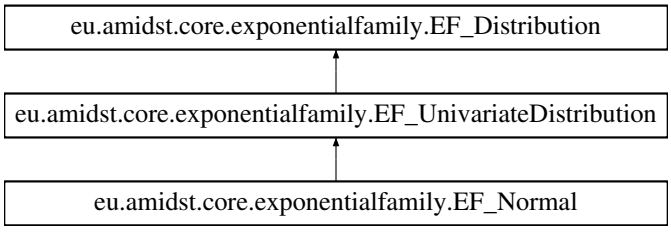
*var_*	The variable of the distribution.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_Multinomial.java

5.38 eu.amidst.core.exponentialfamily.EF_Normal Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.EF_Normal:



Public Member Functions

- **EF_Normal** (Variable var_)
- double **computeLogBaseMeasure** (double val)
- double **computeLogNormalizer** ()
- SufficientStatistics **getSufficientStatistics** (double val)
- void **updateNaturalFromMomentParameters** ()
- void **updateMomentFromNaturalParameters** ()
- int **sizeOfSufficientStatistics** ()

Static Public Member Functions

- static SufficientStatistics **sufficientStatistics** (double val)

Static Public Attributes

- static int **EXPECTED_MEAN** = 0
- static int **EXPECTED_SQUARE** = 1

Additional Inherited Members

5.38.1 Detailed Description

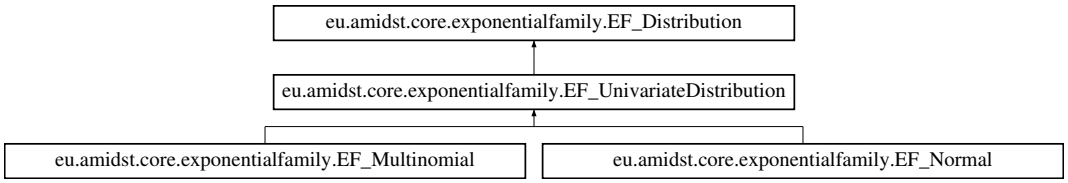
Created by andresmasegosa on 13/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_Normal.java

5.39 eu.amidst.core.exponentialfamily.EF_UnivariateDistribution Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.EF_UnivariateDistribution:



Public Member Functions

- abstract double **computeLogBaseMeasure** (double val)
- abstract SufficientStatistics **getSufficientStatistics** (double val)
- double **computeProbabilityOf** (double val)
- double **computeLogProbabilityOf** (double val)
- SufficientStatistics **getSufficientStatistics** (DataInstance data)
- double **computeLogBaseMeasure** (DataInstance dataInstance)

Additional Inherited Members

5.39.1 Detailed Description

Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/EF_UnivariateDistribution.java

5.40 eu.amidst.core.database.filereaders.arffFileReader.Keys Class Reference

Public Member Functions

- **Keys** (int[] doubleKeys, int[] intKeys)
- int[] **getDoubleKeys** ()
- int[] **getIntKeys** ()

5.40.1 Detailed Description

Created by sigveh on 10/20/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/arffFileReader/Keys.java

5.41 eu.amidst.Main Class Reference

Static Public Member Functions

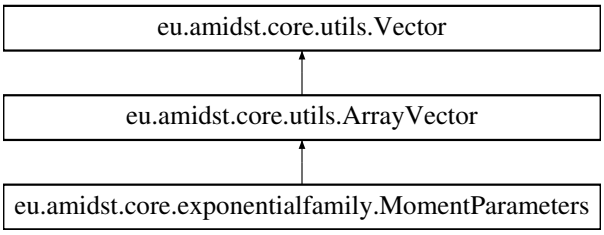
- static void **main** (String[] args)

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/Main.java

5.42 eu.amidst.core.exponentialfamily.MomentParameters Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.MomentParameters:



Public Member Functions

- **MomentParameters** (int size)
- **MomentParameters** (double[] vec)

Additional Inherited Members

5.42.1 Detailed Description

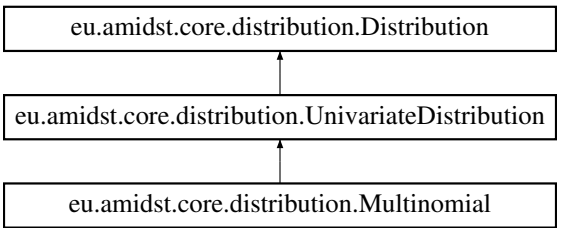
Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/MomentParameters.java

5.43 eu.amidst.core.distribution.Multinomial Class Reference

Inheritance diagram for eu.amidst.core.distribution.Multinomial:



Public Member Functions

- Multinomial (Variable var)
- void setProbabilities (double[] probabilities)
- void setProbabilityOfState (int state, double prob)
- double getProbabilityOfState (int state)
- double[] getProbabilities ()
- double getLogProbability (double value)

Additional Inherited Members

5.43.1 Detailed Description

This class implements a univariate multinomial distribution.

Author

Antonio Fernández

Version

1.0

Since

2014-11-3

5.43.2 Constructor & Destructor Documentation

5.43.2.1 eu.amidst.core.distribution.Multinomial.Multinomial (Variable *var*)

The class constructor.

Parameters

var	The variable of the distribution.

5.43.3 Member Function Documentation

5.43.3.1 double eu.amidst.core.distribution.Multinomial.getLogProbability (double *value*)

Computes the logarithm of the probability for a given variable state.

Parameters

value	The position of the variable state in the array of probabilities (represented as a `double` for generality reasons).

Returns

A `double` value with the logarithm of the probability.

5.43.3.2 double [ ] eu.amidst.core.distribution.Multinomial.getProbabilities ( )

Gets the array of probabilities for the different states of the variable.

Returns

An array of `double` with the probabilities.

5.43.3.3 double eu.amidst.core.distribution.Multinomial.getProbabilityOfState (int *state*)

Parameters

state	

Returns

5.43.3.4 void eu.amidst.core.distribution.Multinomial.setProbabilities (double[ ] *probabilities*)

Sets the probability values to the distribution.

Parameters

probabilities	An array of probabilities in the same order as the variable states.

5.43.3.5 void eu.amidst.core.distribution.Multinomial.setProbabilityOfState (int *state,* double *prob*)

Set a probability value in a given position in the array of probabilities.

Parameters

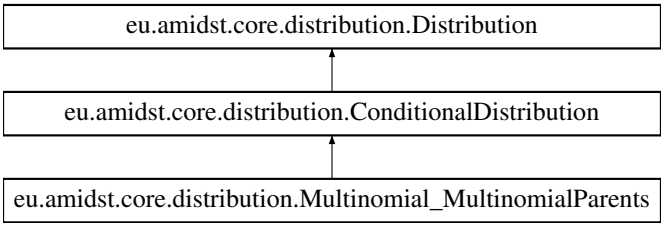
state	The position in which the probability is set.
prob	A probability value.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Multinomial.java

5.44 eu.amidst.core.distribution.Multinomial_MultinomialParents Class Reference

Inheritance diagram for eu.amidst.core.distribution.Multinomial_MultinomialParents:



Public Member Functions

- Multinomial_MultinomialParents (Variable var, List< Variable > parents)
- Multinomial[] **getProbabilities** ()
- void setMultinomial (int position, Multinomial multinomialDistribution)
- void setMultinomial (Assignment parentAssignment, Multinomial multinomialDistribution)
- Multinomial getMultinomial (Assignment parentAssignment)
- Multinomial **getMultinomial** (int position)
- double getLogConditionalProbability (Assignment parentAssignment)

Additional Inherited Members

5.44.1 Detailed Description

This class implements a conditional distribution of a multinomial variable given a set of multinomial parents.

Author

Antonio Fernández

Version

1.0

Since

2014-11-4

5.44.2 Constructor & Destructor Documentation

5.44.2.1 eu.amidst.core.distribution.Multinomial_MultinomialParents.Multinomial_MultinomialParents (Variable *var,* List< Variable > *parents*)

The class constructor.

Parameters

var	The variable of the distribution.
parents	The set of parents of the variable.

5.44.3 Member Function Documentation

5.44.3.1 double eu.amidst.core.distribution.Multinomial_MultinomialParents.getLogConditionalProbability (Assignment *parentAssignment*)

Computes the logarithm of the probability of the variable for a given state and a parent assignment.

Parameters

parent↩ Assignment	An `Assignment` for the parents.

Returns

A `double` value with the logarithm of the probability.

5.44.3.2 Multinomial eu.amidst.core.distribution.Multinomial_MultinomialParents.getMultinomial (Assignment *parentAssignment*)

Gets the `Multinomial` distribution for given a parents assignment.

Parameters

parent↩ Assignment	An `Assignment` for the parents.

Returns

A `Multinomial` object.

5.44.3.3 void eu.amidst.core.distribution.Multinomial_MultinomialParents.setMultinomial (int *position,* Multinomial *multinomialDistribution*)

Sets a `Multinomial` distribution in a given position in the array of probabilities.

Parameters

position	The position in which the distribution is set.
multinomial↩ Distribution	A `Multinomial` object.

5.44.3.4 void eu.amidst.core.distribution.Multinomial_MultinomialParents.setMultinomial (Assignment *parentAssignment,* Multinomial *multinomialDistribution*)

Sets a `Multinomial` distribution in a position in the array of probabilities determined by a given parents assignment.

Parameters

parent↩ Assignment	An `Assignment` for the parents.
multinomial↩ Distribution	A `Multinomial` object.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Multinomial_MultinomialParents.java

5.45 eu.amidst.core.utils.MultinomialIndex Class Reference

Static Public Member Functions

- static int getIndexFromVariableAssignment (List< Variable > vars, Assignment assignment)
- static int getIndexFromVariableAssignment (List< Variable > vars, List< Double > assignment)
- static int **getIndexFromDataInstance** (List< Variable > vars, DataInstance dataInstance)
- static int getIndexFromVariableAssignment (List< Variable > vars, double[] assignment)
- static double[] getVariableAssignmentFromIndex (List< Variable > vars, int index)
- static int getNumberOfPossibleAssignments (List< Variable > vars)

5.45.1 Detailed Description

This class implements various static methods useful when indexing arrays of distributions involving multinomial variables.

Author

Antonio Fernández

Version

1.0

Since

2014-11-4

5.45.2 Member Function Documentation

5.45.2.1 static int eu.amidst.core.utils.MultinomialIndex.getIndexFromVariableAssignment (List< Variable > *vars,* Assignment *assignment*) [static]

Computes the order of an assignment when indexing the set of possible values for a set of multinomial variables.

Example: Let X, Y and Z three multinomial variables with states {0,1}, {0,1} and {0,1,2} respectively. Then, they are indexed as:

```
X Y Z Index
0 0 0   0
1 0 0   1
0 1 0   2
1 1 0   3
0 0 1   4
1 0 1   5
0 1 1   6
1 1 1   7
0 0 2   8
1 0 2   9
0 1 2  10
1 1 2  11
```

So, for instance Index(0,0,2) = 8.

Parameters

vars	A `List` of variables.
assignment	A `Assignment` for a set of variables.

Returns

The index of the corresponding assignment among the possible ones.

5.45.2.2 static int eu.amidst.core.utils.MultinomialIndex.getIndexFromVariableAssignment (List< Variable > *vars*, List< Double > *assignment*) [static]

Computes the order of an assignment when indexing the set of possible values for a set of multinomial variables.

Parameters

vars	A `List` of variables.
assignment	A `List` of double values for the variables in the same order.

Returns

The index of the corresponding assignment among the possible ones.

5.45.2.3 static int eu.amidst.core.utils.MultinomialIndex.getIndexFromVariableAssignment (List< Variable > *vars*, double[] *assignment*) [static]

Computes the order of an assignment when indexing the set of possible values for a set of multinomial variables.

Parameters

vars	A `List` of variables.
assignment	An array of `double` with the values of variables in the same order.

Returns

The index of the corresponding assignment among the possible ones.

5.45.2.4 static int eu.amidst.core.utils.MultinomialIndex.getNumberOfPossibleAssignments (List< Variable > *vars*) [static]

Computes the number of possible assignments for a list of variables

Parameters

vars	The `List` of variables.

Returns

A `integer` indicating the number of possible assignments.

5.45.2.5 static double [] eu.amidst.core.utils.MultinomialIndex.getVariableAssignmentFromIndex (List< Variable > *vars*, int *index*) [static]

Computes the variable assignment located in a given position.

Parameters

vars	A `List` of variables.
index	The position of the `Assignment`.

Returns

An array of `double` with the values of the variables representing the assignment.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/utils/MultinomialIndex.java

5.46 eu.amidst.core.potential.MultivariateGaussian Class Reference

Public Member Functions

- double **density** (double[] values)
- void **setMean** (double[] values)
- double **getMean** ()
- void **setCovariances** (double[][] values)
- double[][] **getCovariances** ()
- double[] **sample** ()

5.46.1 Detailed Description

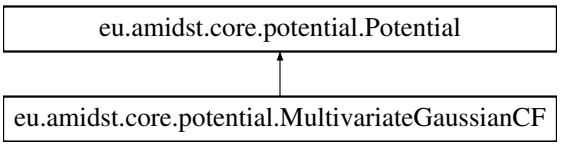
Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/potential/MultivariateGaussian.java

5.47 eu.amidst.core.potential.MultivariateGaussianCF Class Reference

Inheritance diagram for eu.amidst.core.potential.MultivariateGaussianCF:



Public Member Functions

- void **setParameters** (MultivariateGaussian prob)
- double[][] **getKParameter** ()
- double[] **getHParameter** ()
- double **getGParameter** ()
- MultivariateGaussian **getMG** ()
- void **setVariables** (List variables)
- List **getVariables** ()
- void **combine** (Potential pot)
- void **marginalize** (List variables)

5.47.1 Detailed Description

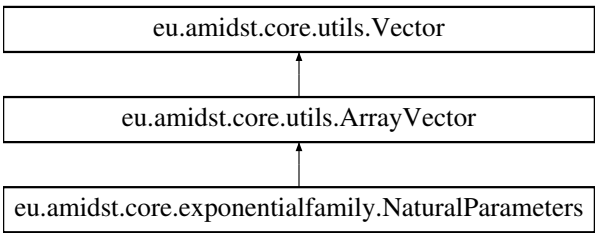
Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/potential/MultivariateGaussianCF.java

5.48 eu.amidst.core.exponentialfamily.NaturalParameters Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.NaturalParameters:



Public Member Functions

- **NaturalParameters** (int size)
- **NaturalParameters** (double[] vec)

Additional Inherited Members

5.48.1 Detailed Description

Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/NaturalParameters.java

5.49 eu.amidst.core.database.filereaders.NextDynamicDataInstance Class Reference

Public Member Functions

- **NextDynamicDataInstance** (DataRow past, DataRow present, int sequenceID, int timeIDcounter)
- DynamicDataInstance **nextDataInstance_NoTimeID_NoSeq** (DataFileReader reader)
- DynamicDataInstance **nextDataInstance_NoSeq** (DataFileReader reader, Attribute attTimeID)
- DynamicDataInstance **nextDataInstance_NoTimeID** (DataFileReader reader, Attribute attSequenceID)
- DynamicDataInstance **nextDataInstance** (DataFileReader reader, Attribute attSequenceID, Attribute attTimeID)

5.49.1 Detailed Description

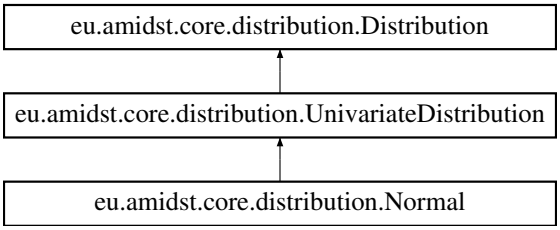
Created by ana@cs.aau.dk on 13/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/NextDynamicDataInstance.↩ java

5.50 eu.amidst.core.distribution.Normal Class Reference

Inheritance diagram for eu.amidst.core.distribution.Normal:



Public Member Functions

- Normal (Variable var)
- double getMean ()
- void setMean (double mean)
- double getSd ()
- void setSd (double sd)
- double getProbability (double value)
- double getLogProbability (double value)

Additional Inherited Members

5.50.1 Detailed Description

This class implements a univariate Normal distribution.

Author

Antonio Fernández

Version

1.0

Since

2014-11-3

5.50.2 Constructor & Destructor Documentation

5.50.2.1 eu.amidst.core.distribution.Normal.Normal (Variable *var*)

The class constructor.

Parameters

var	The variable of the distribution.

5.50.3 Member Function Documentation

5.50.3.1 double eu.amidst.core.distribution.Normal.getLogProbability (double *value*)

Computes the logarithm of the density function in a given point.

Parameters

value	An value for the variable.

Returns

A `double` with the logarithm of the density value.

5.50.3.2 double eu.amidst.core.distribution.Normal.getMean ( )

Gets the mean of the distribution.

Returns

A `double` value with the mean.

5.50.3.3 double eu.amidst.core.distribution.Normal.getProbability (double *value*)

Evaluates the density function in a given point.

Parameters

value	An value for the variable.

Returns

A `double` with the value of the density.

5.50.3.4 double eu.amidst.core.distribution.Normal.getSd ( )

Gets the standard deviation of the distribution.

Returns

A `double` value with the standar deviation.

5.50.3.5 void eu.amidst.core.distribution.Normal.setMean (double *mean*)

Sets the mean of the distribution.

Parameters

mean	A value for the mean.

5.50.3.6 void eu.amidst.core.distribution.Normal.setSd (double *sd*)

Sets the standard deviation of the distribution.

Parameters

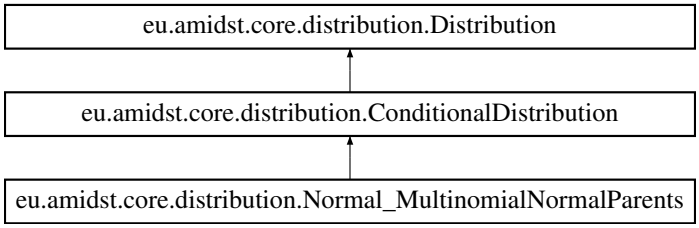
sd	A value for the standard deviation.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Normal.java

5.51 eu.amidst.core.distribution.Normal_MultinomialNormalParents Class Reference

Inheritance diagram for eu.amidst.core.distribution.Normal_MultinomialNormalParents:



Public Member Functions

- Normal_MultinomialNormalParents (Variable var, List< Variable > parents)
- Normal_NormalParents getNormal_NormalParentsDistribution (Assignment assignment)
- Normal_NormalParents **getNormal_NormalParentsDistribution** (int i)
- void setNormal_NormalParentsDistribution (int position, Normal_NormalParents distribution)
- void setNormal_NormalParentsDistribution (Assignment assignment, Normal_NormalParents distribution)
- double getLogConditionalProbability (Assignment assignment)
- List< Variable > **getMultinomialParents** ()
- List< Variable > **getNormalParents** ()
- Normal_NormalParents[] **getDistribution** ()

Additional Inherited Members

5.51.1 Detailed Description

This class implements a conditional distribution of a normal variable given a set of multinomial and normal parents.

Author

Antonio Fernández

Version

1.0

Since

2014-11-4

5.51.2 Constructor & Destructor Documentation

5.51.2.1 eu.amidst.core.distribution.Normal_MultinomialNormalParents.Normal_MultinomialNormalParents (Variable *var,* List< Variable > *parents*)

The class constructor.

Parameters

var	The variable of the distribution.
parents	The set of parent variables.

5.51.3 Member Function Documentation

5.51.3.1 double eu.amidst.core.distribution.Normal_MultinomialNormalParents.getLogConditionalProbability (Assignment *assignment*)

Computes the logarithm of the evaluated density function in a point after restricting the distribution to a given parent `Assignment`.

Parameters

assignment	An `Assignment`

Returns

A `double` with the logarithm of the corresponding density value.

5.51.3.2 Normal_NormalParents eu.amidst.core.distribution.Normal_MultinomialNormalParents.getNormal_Normal↩ ParentsDistribution (Assignment *assignment*)

Gets a `Normal_NormalParentsDistribution` distribution conditioned to an assignment over a set of Multinomial parents. Let X and Y two sets of Normal variables, and Z a set of Multinomial. Then this method computes f(X|Y,Z=z).

Parameters

assignment	An assignment over a set of parents. For generality reasons, apart from the Multinomial parents, the assignment contains values for the Normal parents as well (although they are not used in this case).

Returns

a `Normal_NormalParentsDistribution` distribution conditioned to the assignment given as argument.

5.51.3.3 void eu.amidst.core.distribution.Normal_MultinomialNormalParents.setNormal_NormalParentsDistribution (int *position,* Normal_NormalParents *distribution*)

Sets a `Normal_NormalParents` distribution to a given position in the array of distributions.

Parameters

position	The position in which the distribution is set.
distribution	A `Normal_NormalParents` distribution.

5.51.3.4 void eu.amidst.core.distribution.Normal_MultinomialNormalParents.setNormal_NormalParentsDistribution (Assignment *assignment,* Normal_NormalParents *distribution*)

Sets a `Normal_NormalParents` distribution to the array of distributions in a position determined by an given `Assignment`. Note that this assignment contains values for the Normal parents as well (although they are not used in this case).

Parameters

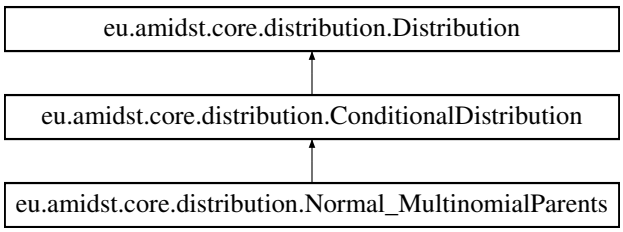
assignment	An `Assignment` for the parents variables.
distribution	A `Normal_NormalParents` distribution.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Normal_MultinomialNormalParents.↩ java

5.52 eu.amidst.core.distribution.Normal_MultinomialParents Class Reference

Inheritance diagram for eu.amidst.core.distribution.Normal_MultinomialParents:



Public Member Functions

- Normal_MultinomialParents (Variable var, List< Variable > parents)
- Normal **getNormal** (int position)
- Normal getNormal (Assignment parentsAssignment)
- void setNormal (int position, Normal normalDistribution)
- void setNormal (Assignment parentsAssignment, Normal normalDistribution)
- double getLogConditionalProbability (Assignment assignment)

Additional Inherited Members

5.52.1 Detailed Description

This class implements a conditional distribution of a normal variable given a set of multinomial parents.

Author

Antonio Fernández

Version

1.0

Since

2014-11-4

5.52.2 Constructor & Destructor Documentation

5.52.2.1 eu.amidst.core.distribution.Normal_MultinomialParents.Normal_MultinomialParents (Variable *var,* List< Variable > *parents*)

The class constructor.

Parameters

var	The variable of the distribution.
parents	The set of parent variables.

5.52.3 Member Function Documentation

5.52.3.1 double eu.amidst.core.distribution.Normal_MultinomialParents.getLogConditionalProbability (Assignment *assignment*)

Computes the logarithm of the evaluated density function in a point after conditioning the distribution to a given parent `Assignment`.

Parameters

assignment	An `Assignment` for the parents.

Returns

A `double` with the logarithm of the corresponding density value.

5.52.3.2 Normal eu.amidst.core.distribution.Normal_MultinomialParents.getNormal (Assignment *parentsAssignment*)

Gets the corresponding univariate normal distribution after conditioning the distribution to a multinomial parent assignment.

Parameters

parents↩ Assignment	An `Assignment` for the parents.

Returns

A `Normal` object with the univariate distribution.

5.52.3.3 void eu.amidst.core.distribution.Normal_MultinomialParents.setNormal (int *position,* Normal *normalDistribution*)

Sets a `Normal` distribution in a given position in the array of distributions.

Parameters

position	The position in which the distribution is set.
normal↩ Distribution	The `Normal` distribution to be set.

5.52.3.4 void eu.amidst.core.distribution.Normal_MultinomialParents.setNormal (Assignment *parentsAssignment,* Normal *normalDistribution*)

Sets a `Multinomial` distribution in a position in the array of distributions determined by a given parents assignment.

Parameters

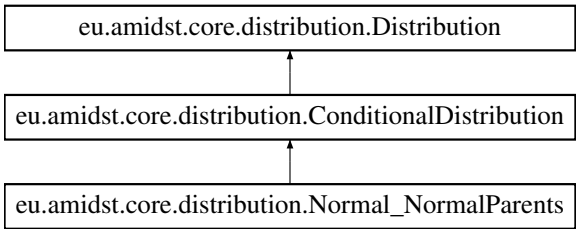
parents↩ Assignment	An `Assignment` for the parents.
normal↩ Distribution	The `Normal` distribution to be set.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Normal_MultinomialParents.java

5.53 eu.amidst.core.distribution.Normal_NormalParents Class Reference

Inheritance diagram for eu.amidst.core.distribution.Normal_NormalParents:



Public Member Functions

- Normal_NormalParents (Variable var, List< Variable > parents)
- double getIntercept ()
- void setIntercept (double intercept)
- double[] getCoeffParents ()
- void setCoeffParents (double[] coeffParents)
- double getSd ()
- void setSd (double sd)
- Normal getUnivariateNormal (Assignment parentsAssignment)
- double getLogConditionalProbability (Assignment assignment)

Additional Inherited Members

5.53.1 Detailed Description

This class implements a Conditional Linear Gaussian distribution, i.e. a distribution of a normal variable with continuous normal parents.

Author

Antonio Fernández

Version

1.0

Since

2014-11-4

5.53.2 Constructor & Destructor Documentation

5.53.2.1 eu.amidst.core.distribution.Normal_NormalParents.Normal_NormalParents (Variable *var,* List< Variable > *parents*)

The class constructor.

Parameters

var	The variable of the distribution.
parents	The set of parents of the variable.

5.53.3 Member Function Documentation

5.53.3.1 double [ ] eu.amidst.core.distribution.Normal_NormalParents.getCoeffParents ( )

Gets the coefficients for the parent variables.

Returns

An array of `double` with the coefficients.

5.53.3.2 double eu.amidst.core.distribution.Normal_NormalParents.getIntercept ( )

Gets the intercept of the distribution.

Returns

A `double` value with the intercept.

5.53.3.3 double eu.amidst.core.distribution.Normal_NormalParents.getLogConditionalProbability (Assignment *assignment*)

Computes the logarithm of the evaluated density function in a point after conditioning the distribution to a given parent `Assignment`.

Parameters

assignment	An `Assignment`

Returns

A `double` with the logarithm of the corresponding density value.

5.53.3.4 double eu.amidst.core.distribution.Normal_NormalParents.getSd ( )

Gets the standard deviation of the variable.

Returns

A `double` value with the standard deviation.

5.53.3.5 Normal eu.amidst.core.distribution.Normal_NormalParents.getUnivariateNormal (Assignment *parentsAssignment*)

Gets the corresponding univariate normal distribution after conditioning the distribution to a parent assignment.

Parameters

parents↩ Assignment	An `Assignment` for the parents.

Returns

A `Normal` object with the univariate distribution.

5.53.3.6 void eu.amidst.core.distribution.Normal_NormalParents.setCoeffParents (double[] *coeffParents*)

Sets the coefficients of the distribution

Parameters

coeffParents	An array of `double` with the coefficients, one for each parent.

5.53.3.7 void eu.amidst.core.distribution.Normal_NormalParents.setIntercept (double *intercept*)

Sets the intercept of the distribution.

Parameters

intercept	A `double` value with the intercept.

5.53.3.8 void eu.amidst.core.distribution.Normal_NormalParents.setSd (double *sd*)

Sets the standard deviation of the variable.

Parameters

sd	A `double` value with the standard deviation.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/Normal_NormalParents.java

5.54 eu.amidst.core.huginlink.Others Class Reference

5.54.1 Detailed Description

Created by afa on 18/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/huginlink/Others.java

5.55 eu.amidst.core.modelstructure.ParentSet Class Reference

Public Member Functions

- void **addParent** (Variable var)
- void **removeParent** (Variable var)
- List< Variable > **getParents** ()
- int **getNumberOfParents** ()
- void blockParents ()

Static Public Member Functions

- static ParentSet **newParentSet** ()

5.55.1 Detailed Description

Created by afa on 02/07/14.

5.55.2 Member Function Documentation

5.55.2.1 void eu.amidst.core.modelstructure.ParentSet.blockParents ( )

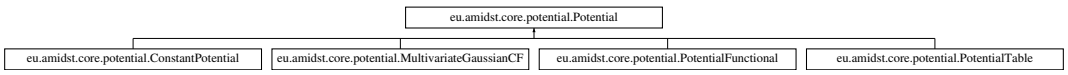
Is an ArrayList pointer to an ArrayList unmodifiable object still unmodifiable? I guess so right?

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/modelstructure/ParentSet.java

5.56 eu.amidst.core.potential.Potential Interface Reference

Inheritance diagram for eu.amidst.core.potential.Potential:



Public Member Functions

- void **setVariables** (List variables)
- List **getVariables** ()
- void **combine** (Potential pot)
- void **marginalize** (List variables)

5.56.1 Detailed Description

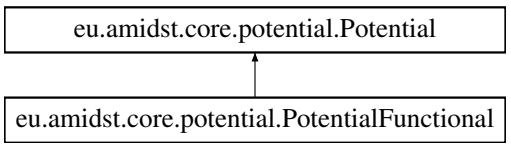
Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/potential/Potential.java

5.57 eu.amidst.core.potential.PotentialFunctional Class Reference

Inheritance diagram for eu.amidst.core.potential.PotentialFunctional:



Public Member Functions

- void **setVariables** (List variables)
- List **getVariables** ()
- void **combine** (Potential pot)
- void **marginalize** (List variables)

5.57.1 Detailed Description

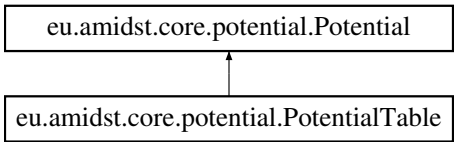
Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/potential/PotentialFunctional.java

5.58 eu.amidst.core.potential.PotentialTable Class Reference

Inheritance diagram for eu.amidst.core.potential.PotentialTable:



Public Member Functions

- **PotentialTable** (int nstates)
- void **setValues** (double[] values)
- double[] **getValues** ()
- void **setVariables** (List variables)
- List **getVariables** ()
- void **combine** (Potential pot)
- void **marginalize** (List variables)
- void **normalize** ()

5.58.1 Detailed Description

Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/potential/PotentialTable.java

5.59 eu.amidst.core.database.dynamics.SequenceDataStream Interface Reference

Public Member Functions

- Attributes **getDynamicAttributes** ()
- int **getNumTimeStepsBack** ()
- boolean **hasMoreData** ()
- DynamicDataInstance **nextSequenceData** ()
- void **reset** ()
- boolean **isReseteable** ()

5.59.1 Detailed Description

Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/dynamics/SequenceDataStream.java

5.60 eu.amidst.core.database.dynamics.readers.SequenceDataStreamReaderFromFile Class Reference

Public Member Functions

- **SequenceDataStreamReaderFromFile** (String fileName)
- SequenceDataStream **getDataStream** ()

5.60.1 Detailed Description

Created by andresmasegosa on 27/08/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/dynamics/readers/SequenceData↩ StreamReaderFromFile.java

5.61 eu.amidst.core.database.dynamics.SequenceStreamWindow Interface Reference

Public Member Functions

- Attributes **getDynamicAttributes** ()
- int **getWindowSize** ()
- boolean **hasMoreData** ()
- void **loadNextWindow** ()
- DynamicDataInstance **getSequenceData** (int indexInWindow)
- boolean **isReseteable** ()
- void **reset** ()

5.61.1 Detailed Description

Created by afa on 03/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/dynamics/SequenceStreamWindow.java

5.62 eu.amidst.core.variables.StateSpaceType Enum Reference

Static Public Member Functions

- static StateSpaceType **parseKind** (String s)

Public Attributes

- **REAL**

5.62.1 Detailed Description

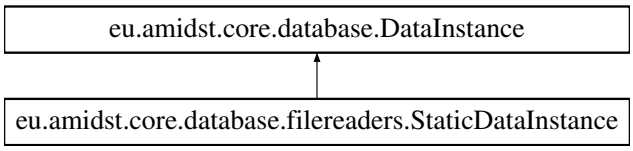
Created by sigveh on 10/20/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/StateSpaceType.java

5.63 eu.amidst.core.database.filereaders.StaticDataInstance Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.StaticDataInstance:



Public Member Functions

- **StaticDataInstance** (DataRow dataRow_)
- double **getValue** (Variable var)
- int **getSequenceID** ()
- int **getTimeID** ()

5.63.1 Detailed Description

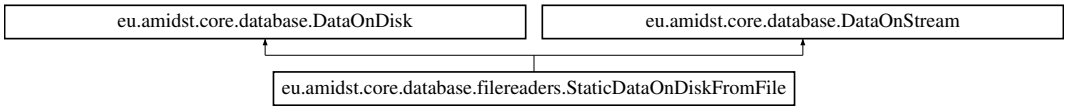
Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/StaticDataInstance.java

5.64 eu.amidst.core.database.filereaders.StaticDataOnDiskFromFile Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.StaticDataOnDiskFromFile:



Public Member Functions

- **StaticDataOnDiskFromFile** (DataFileReader reader)
- DataInstance **nextDataInstance** ()
- boolean **hasMoreDataInstances** ()
- Attributes **getAttributes** ()
- void **restart** ()

5.64.1 Detailed Description

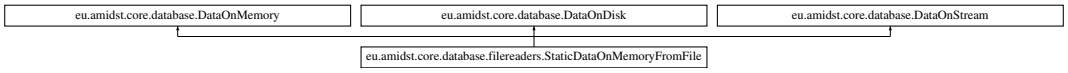
Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/StaticDataOnDiskFrom↩ File.java

5.65 eu.amidst.core.database.filereaders.StaticDataOnMemoryFromFile Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.StaticDataOnMemoryFromFile:



Public Member Functions

- **StaticDataOnMemoryFromFile** (DataFileReader reader)
- int **getNumberOfDataInstances** ()
- DataInstance **getDataInstance** (int i)
- DataInstance **nextDataInstance** ()
- boolean **hasMoreDataInstances** ()
- void **restart** ()
- Attributes **getAttributes** ()

5.65.1 Detailed Description

Created by andresmasegosa on 11/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/StaticDataOnMemoryFrom↩ File.java

5.66 eu.amidst.core.variables.StaticVariables Class Reference

Public Member Functions

- StaticVariables (Attributes atts)
- StaticVariables (Attributes atts, HashMap< Attribute, DistType > typeDists)
- Variable **addHiddenVariable** (VariableBuilder builder)
- List< Variable > **getVariables** ()
- Variable **getVariable** (int varID)
- Variable **getVariable** (String name)
- int **getNumberOfVars** ()

5.66.1 Detailed Description

Created by afa on 02/07/14.

5.66.2 Constructor & Destructor Documentation

5.66.2.1 eu.amidst.core.variables.StaticVariables.StaticVariables (Attributes *atts*)

Constructor where the distribution type of random variables is initialized by default.

5.66.2.2 eu.amidst.core.variables.StaticVariables.StaticVariables (Attributes *atts*, HashMap< Attribute, DistType > *typeDists*)

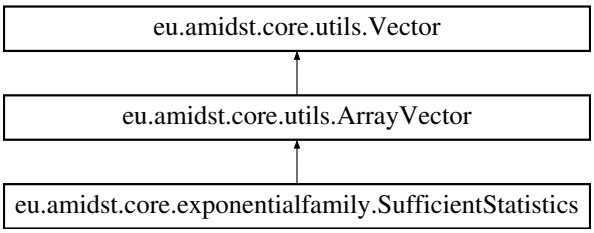
Constructor where the distribution type of random variables is provided as an argument.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/StaticVariables.java

5.67 eu.amidst.core.exponentialfamily.SufficientStatistics Class Reference

Inheritance diagram for eu.amidst.core.exponentialfamily.SufficientStatistics:



Public Member Functions

- **SufficientStatistics** (int size)
- **SufficientStatistics** (double[] vec)

Additional Inherited Members

5.67.1 Detailed Description

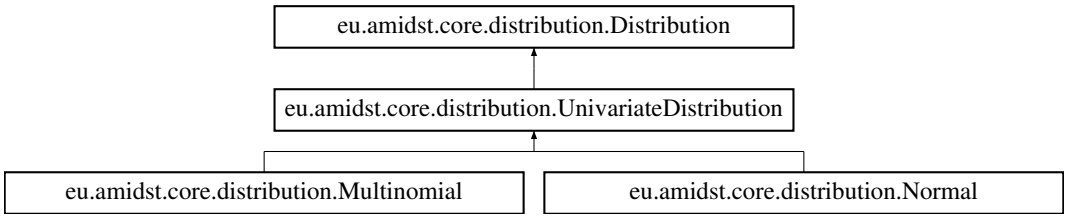
Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/exponentialfamily/SufficientStatistics.java

5.68 eu.amidst.core.distribution.UnivariateDistribution Class Reference

Inheritance diagram for eu.amidst.core.distribution.UnivariateDistribution:



Public Member Functions

- double getProbability (double value)
- abstract double getLogProbability (double value)

Additional Inherited Members

5.68.1 Detailed Description

This interface generalizes the set of univariate distributions.

Author

Antonio Fernández

Version

1.0

Since

2014-11-3

5.68.2 Member Function Documentation

5.68.2.1 abstract double eu.amidst.core.distribution.UnivariateDistribution.getLogProbability (double *value*) [abstract]

Evaluates the distribution in a given point.

Parameters

value	The point to be evaluated.

Returns

A `double` value with the logarithm of the evaluated distribution.

5.68.2.2 double eu.amidst.core.distribution.UnivariateDistribution.getProbability (double *value*)

Evaluates the distribution in a given point.

Parameters

value	The point to be evaluated.

Returns

A `double` value with the evaluated distribution.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/distribution/UnivariateDistribution.java

5.69 eu.amidst.core.utils.Utils Class Reference

Static Public Member Functions

- static double **getMissingValue** ()
- static boolean **isMissing** (double val)
- static void **accumulatedSumVectors** (double[] a, double[] b)

5.69.1 Detailed Description

Created by andresmasegosa on 28/08/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/utils/Utils.java

5.70 eu.amidst.core.variables.Variable Interface Reference

Public Member Functions

- String **getName** ()
- int **getVarID** ()
- boolean **isObservable** ()
- int **getNumberOfStates** ()
- StateSpaceType **getStateSpaceType** ()
- DistType **getDistributionType** ()
- boolean **isTemporalClone** ()
- Attribute **getAttribute** ()

5.70.1 Detailed Description

Created by afa on 02/07/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/Variable.java

5.71 eu.amidst.core.variables.VariableBuilder Class Reference

Public Member Functions

- **VariableBuilder** (Attribute att)
- **VariableBuilder** (Attribute att, DistType typeDist)

Static Public Member Functions

- static String **getName** ()
- static boolean **isObservable** ()
- static int **getNumberOfStates** ()
- static StateSpaceType **getStateSpaceType** ()
- static DistType **getDistributionType** ()
- static Attribute **getAttribute** ()

5.71.1 Detailed Description

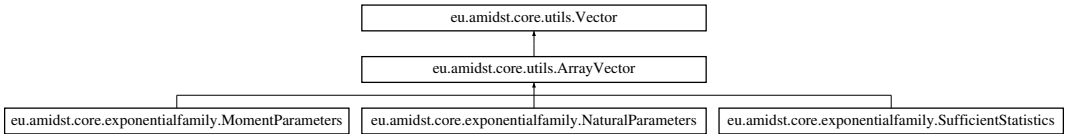
Created by andresmasegosa on 04/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/variables/VariableBuilder.java

5.72 eu.amidst.core.utils.Vector Interface Reference

Inheritance diagram for eu.amidst.core.utils.Vector:



Public Member Functions

- double **get** (int i)
- void **set** (int i, double val)
- int **size** ()
- default void **dotProduct** (Vector vec)

Static Public Member Functions

- static double **dotProduct** (Vector vec1, Vector vec2)

5.72.1 Detailed Description

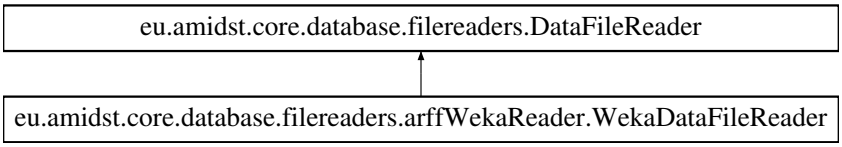
Created by andresmasegosa on 12/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/utils/Vector.java

5.73 eu.amidst.core.database.filereaders.arffWekaReader.WekaDataFileReader Class Reference

Inheritance diagram for eu.amidst.core.database.filereaders.arffWekaReader.WekaDataFileReader:



Public Member Functions

- **WekaDataFileReader** (String s)
- Attributes **getAttributes** ()
- DataRow **nextDataRow** ()
- boolean **hasMoreDataRows** ()
- void **reset** ()
- boolean **doesItReadThisFileExtension** (String fileExtension)

5.73.1 Detailed Description

Created by ana@cs.aau.dk on 14/11/14.

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

- /Users/ana/Documents/core/src/main/java/eu/amidst/core/database/filereaders/arffWekaReader/Weka↩ DataFileReader.java