

CPT tools

Very much a work in progress

Manipulating CPTs

numericPart	Splits a mixed data frame into a numeric matrix and a factor part.
rescaleTable	Rescales the numeric part of the table
normalizeTable	
scaleMatrix	Scales a matrix to have a unit diagonal
scaleTable	Scales a table according to the Sum and Scale column.
getTableParents	Gets meta data about a conditional probability table.
getTableStates	Gets meta data about a conditional probability table.

Combination Rules/Structure Functions

Compensatory	DiBello-Samejima combination function
Conjunctive	
Disjunctive	
OffsetConjunctive	Conjunctive combination function with one difficulty per parent.
OffsetDisjunctive	
eThetaFrame	Constructs a data frame showing the effective thetas for each parent combination.
effectiveThetas	Assigns effective theta levels for categorical variable

DiBello-XX Models

calcDSTable	Creates the probability table for DiBello-Samejima distribution
calcDSFrame	
calcDNTable	Creates the probability table for DiBello-Normal distribution
calcDNFrame	
calcDDTable	Calculates DiBello-Dirichlet model probability and parameter tables
calcDDFrame	
calcDSlike	Calculates the log-likelihood for data from a DiBello-Samejima (Normal) distribution

Discrete Partial Credit Model

calcDPCTable	Creates the probability table for the discrete partial credit model
calcDPCFrame	
gradedResponse	A link function based on Samejima's graded response
partialCredit	A link function based on the generalized partial credit model
mapDPC	Finds an MAP estimate for a discrete partial credit CPT

Noisy-logic models

calcNoisyAndTable	Calculate the conditional probability table for a Noisy-And or Noisy-Min distribution
calcNoisyAndFrame	
calcNoisyOrTable	Calculate the conditional probability table for a Noisy-Or or Noisy-Max distribution
calcNoisyOrFrame	

Model Construction Utilities

buildFactorTab	Builds probability tables from Scored Bayes net output.
build2FactorTab	
buildMarginTab	
marginTab	
buildParentList	Builds a list of parents of nodes in a graph
dataTable	Constructs a table of counts from a set of discrete observations.
mcSearch	Orders variables using Maximum Cardinality search
structMatrix	Finds graphical structure from a covariance matrix

Normal Model Utilities

areaProbs	Translates between normal and categorical probabilities
pvecToCutpoints	
pvecToMidpoints	
buildRegressionTables	Builds conditional probability tables from regressions
buildRegressions	Creates a series of regressions from a covariance matrix

Output Plots

<code>colorspread</code>	Produces an ordered palate of colours with the same hue.
<code>stackedBars</code>	Produces a stacked, staggered barplot
<code>stackedBarplot</code>	
<code>compareBars</code>	Produces comparison stacked bar charts for two sets of groups
<code>compareBars2</code>	
<code>parseProbVec</code>	Parses Probability Vector Strings

Diagnostic Plots & Tests

OCP2	Observable Characteristic Plot
OCP	
betaci	Credibility intervals for a proportion based on beta distribution
proflevelci	Produce cumulative sum credibility intervals
ciTest	
localDepTest	

Weight-of-Evidence

mutualInformation	Calculates Mutual Information for a two-way table.
readHistory	Reads a file of histories of marginal distributions.
woeBal	Weight of Evidence Balance Sheet
woeHist	Creates weights of evidence from a history matrix.

Data Sets

MathGrades

Grades on 5 mathematics tests
from Mardia, Kent and Bibby