R documentation

of 'slpDIVA.rd'

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slpDIVA *DIVA category learning model*

Description

DIVergent Autoencoder (Kurtz, 2007; 2015) artificial neural network category learning model.

Usage

```
slpDIVA(st, tr, xtdo = FALSE)
```

Arguments

st	List of model parameters.
tr	R-by-C matrix of training items.
xtdo	Boolean specifying whether to write extended information to the console

Details

This documentation file provides a barebones guide to using slpDIVA to model category learning in the context of the catlearn package. This function follows the design pattern outlined Wills et al. (2016).

Adapted from the slpALCOVE documentation: This function works as a stateful list processor. Specifically, it takes a matrix as an argument, where each row is one trial for the network, and the columns specify the input representation, teaching signals, and other control signals. It returns a matrix where each row is a trial, and the columns are the response probabilities at the output units. It also returns the final state of the network (attention and connection weights), hence its description as a 'stateful' list processor.

Argument st must be a list containing the following items:

num_feats - Number of features for the problem.

num_cats - Number of categories for the problem.

colskip - Skip the first N columns of the tr array, where N = colskip. colskip should be set to the number of optional columns you have added to matrix tr, PLUS ONE. So, if you have added no optional columns, colskip = 1. This is because the first (non-optional) column contains the control values, below.

in_wts - A matrix of weights of dimensions num_feats + 1 x num_hids. Can be set to NULL when the first line of the tr matrix includes control code 1, ctrl = 1.

out_wts - A matrix of weights of dimensions num_hids + 1 x num_cats. Can be set to NULL when the first line of the tr matrix includes control code 1, ctrl = 1.

continuous - A boolean value to indicate if the inputs are continuous or dichotomous. Set Continuous = TRUE when the inputs are continuous.

wts_range - A scalar value for the range of the generated weights.

wts_center - A scalar value for the center of the weights.

num_hids - A scalar value for the number of hidden units. A rough rule of thumb for this hyperparameter is num_feats - 1.

learning_rate -

beta_val -

model_seed -

Index