Package 'iForm'

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Type Package

Title Forward Selection Under Marginality Principle

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Description Extended variable selection approaches to jointly model main and interaction effects from high-dimensional data.

License GPL-3

LazyData TRUE

RoxygenNote 6.0.1.9000

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

R topics documented:

iForm 1
iformselect 2

`iForm` *Interaction Screening for Ultra-High Dimensional Data*

Description

Extended variable selection approaches to jointly model main and interaction effects from high-dimensional data orignally proposed by Hao and Zhang (2014) and extended by Gosik and Wu (2016). Based on a greedy forward approach, their model can identify all possible interaction effects through two algorithms, iFORT and iFORM, which have been proved to possess sure screening property in an ultrahigh-dimensional setting.

Arguments

formula	an object of class "formula" (or one that can be coerced to that class): a symbolic description of the model to be fitted. The details of model specification are given under 'Details'.
data	data.frame of your data with the response and all p predictors
strong	logical TRUE to use strong heredity or FALSE to use weak heredity (default TRUE)
higher_order	logical TRUE indicating to include order-3 interactions in the search (default FALSE)

Details

Runs the iForm selection procedure on the dataset and returns a linear model of the final selected model.

Value

a summary of the linear model returned after the selection procedure

Author(s)

Kirk Gosik

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iformselect *Inner workings for different selections under different higher-orders and strength of marginality.*

Description

Extended variable selection approaches to jointly model main and interaction effects from high-dimensional data orignally proposed by Hao and Zhang (2014) and extended by Gosik and Wu (2016). Based on a greedy forward approach, their model can identify all possible interaction effects through two algorithms, iFORT and iFORM, which have been proved to possess sure screening property in an ultrahigh-dimensional setting.

Arguments

x	design matrix of predictors
y	response variable
p	the size of the predictor set
n	the size of the number of observations
candidate	the current candidate set of predictors to select from
solution	the current set of predictors already selected
model	the set of predictors to use in the final model

`bic`	the cutoff value for determining the model set
`step`	the step in the iteration currently on
`strong`	indicator of the strength of marginality to be used
`higher_order`	logical TRUE indicating to include order-3 interactions in the search (default FALSE)

Details

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