

Package ‘h2otools’

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Type Package

Title Machine Learning Model Evaluation for 'h2o' Package

Version 0.0.1

Depends R (>= 3.5.0)

Description Several functions are provided that simplify using 'h2o' package. Currently, a function for extracting the AutoML model parameter is provided, alongside a function for computing F-Measure statistics at any given threshold. For more information about 'h2o' package see <<https://h2o.ai/>>.

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Encoding UTF-8

Imports h2o (>= 3.34.0.0), curl

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URL <https://github.com/haghigh/h2otools>,
<https://www.sv.uio.no/psi/english/people/aca/haghigh/>

BugReports <https://github.com/haghigh/h2otools/issues>

NeedsCompilation no

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Repository CRAN

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automlModelParam *AutoML Models' Parameters Summary*

Description

Extracts models' parameters from AutoML grid

Usage

```
automlModelParam(model)
```

Arguments

model a h2o AutoML object

Value

a dataframe of models' parameters

Author(s)

E. F. Haghish

Examples

```
if(requireNamespace("h2o")) {  
  library(h2o)  
  h2o.init(ignore_config = TRUE)  
  prostate_path <- system.file("extdata", "prostate.csv", package = "h2o")  
  prostate <- h2o.importFile(path = prostate_path, header = TRUE)  
  y <- "CAPSULE"  
  prostate[,y] <- as.factor(prostate[,y]) #convert to factor for classification  
  aml <- h2o.automl(y = y,  
                  training_frame = prostate,  
                  include_algos = "GLM",  
                  max_models = 1,  
                  max_runtime_secs = 60)  
  
  # extract the model parameters  
  model.param <- automlModelParam(aml@leader)  
}
```

Fmeasure

F-Measure

Description

Calculates F-Measure for any given value of Beta

Usage

```
Fmeasure(perf, beta = 1, max = FALSE)
```

Arguments

perf	a h2o object of class "H2OBinomialMetrics" which is provided by 'h2o.performance' function.
beta	numeric, specifying beta value, which must be higher than zero
max	logical. default is FALSE. if TRUE, instead of providing the F-Measure for all the thresholds, the highest F-Measure is reported.

Value

a matrix of F-Measures for different thresholds or the highest F-Measure value

Author(s)

E. F. Haghish

Examples

```
library(h2o)
h2o.init(ignore_config = TRUE)
prostate_path <- system.file("extdata", "prostate.csv", package = "h2o")
prostate <- h2o.importFile(path = prostate_path, header = TRUE)
y <- "CAPSULE"
prostate[,y] <- as.factor(prostate[,y]) #convert to factor for classification
aml <- h2o.automl(y = y, training_frame = prostate, max_runtime_secs = 30)

# evaluate the model performance
perf <- h2o.performance(aml@leader, xval = TRUE)

# evaluate F-Measure for a Beta = 3
Fmeasure(perf, beta = 3, max = TRUE)

# evaluate F-Measure for a Beta = 1.5
Fmeasure(perf, beta = 1.5, max = TRUE)

# evaluate F-Measure for a Beta = 4
```

```
Fmeasure(perf, beta = 4, max = TRUE)
```

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