# Package ‘Metrics’

February 19, 2015

## Title
Evaluation metrics for machine learning

## Description
Metrics is a set of evaluation metrics that is commonly used in supervised machine learning.

## URL
https://github.com/benhamner/Metrics/tree/master/R

## Version
0.1.1

## Maintainer
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## License
BSD

## Collate
'metrics.r'

## Repository
CRAN

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## NeedsCompilation
no

### R topics documented:

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### ae

*Compute the absolute error*  
This function computes the elementwise absolute error for a number or a vector.

#### Usage

\[
ae(\text{actual}, \text{predicted})
\]

#### Arguments

- **actual**: ground truth number or vector
- **predicted**: predicted number or vector

### apk

*Compute the average precision at k*

#### Description

This function computes the average precision at k between two sequences.

#### Usage

\[
apk(k, \text{actual}, \text{predicted})
\]

#### Arguments

- **k**: max length of predicted sequence
- **actual**: ground truth set (vector)
- **predicted**: predicted sequence (vector)
auc

Compute the area under the ROC (AUC)

Description
This function computes the area under the receiver-operator characteristic (AUC)

Usage
auc(actual, predicted)

Arguments
- actual: binary vector
- predicted: real-valued vector that defines the ranking

ce

Compute the classification error

Description
This function computes the classification error between two vectors

Usage
ce(actual, predicted)

Arguments
- actual: ground truth vector
- predicted: predicted vector

ll

Compute the log loss

Description
This function computes the elementwise log loss for a number or a vector

Usage
ll(actual, predicted)

Arguments
- actual: binary ground truth number or vector
- predicted: predicted number or vector
logLoss

Compute the mean log loss

Description
This function computes the mean log loss between two vectors

Usage
logLoss(actual, predicted)

Arguments
actual    binary ground truth vector
predicted predicted vector

mae

Compute the mean absolute error
This function computes the mean absolute error between two vectors

Description
Compute the mean absolute error This function computes the mean absolute error between two vectors

Usage
mae(actual, predicted)

Arguments
actual    ground truth vector
predicted vector
**mapk**

*Compute the mean average precision at k*

**Description**

This function computes the mean average precision at k of two lists of sequences.

**Usage**

```r
mapk(k, actual, predicted)
```

**Arguments**

- `k`: max length of predicted sequence
- `actual`: list of ground truth sets (vectors)
- `predicted`: list of predicted sequences (vectors)

---

**MeanQuadraticWeightedKappa**

*Compute the mean quadratic weighted kappa*

**Description**

This function computes the mean quadratic weighted kappa, which can optionally be weighted.

**Usage**

```r
MeanQuadraticWeightedKappa(kappas, weights)
```

**Arguments**

- `kappas`: is a vector of possible kappas
- `weights`: is an optional vector of ratings
mse

Compute the mean squared error# This function computes the mean squared error between two vectors

Description

Compute the mean squared error# This function computes the mean squared error between two vectors

Usage

mse(actual, predicted)

Arguments

actual  ground truth vector
predicted  predicted vector

msle

Compute the mean squared log error

Description

This function computes the mean squared log error between two vectors

Usage

msle(actual, predicted)

Arguments

actual  ground truth vector
predicted  predicted vector
### rmse

*Compute the root mean squared error* This function computes the root mean squared error between two vectors

**Description**

Compute the root mean squared error This function computes the root mean squared error between two vectors

**Usage**

```
rmse(actual, predicted)
```

**Arguments**

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### rmsle

*Compute the root mean squared log error*

**Description**

This function computes the root mean squared log error between two vectors

**Usage**

```
rmsle(actual, predicted)
```

**Arguments**

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ScoreQuadraticWeightedKappa

*Compute the quadratic weighted kappa*

**Description**

This function computes the quadratic weighted kappa between two vectors of integers.

**Usage**

```
ScoreQuadraticWeightedKappa(rater.a, rater.b, min.rating, max.rating)
```

**Arguments**

- `rater.a` is the first rater’s ratings
- `rater.b` is the second rater’s ratings
- `min.rating` is the minimum possible rating
- `max.rating` is the maximum possible rating

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**se**

*Compute the squared error*

**Description**

This function computes the elementwise squared error for a number or a vector.

**Usage**

```
se(actual, predicted)
```

**Arguments**

- `actual` ground truth number or vector
- `predicted` predicted number or vector
sle

Compute the squared log error

Description
This function computes the elementwise squared log error for a number or a vector

Usage
sle(actual, predicted)

Arguments
<table>
<thead>
<tr>
<th>actual</th>
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