

# Package ‘MultiClassROC’

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**Type** Package

**Title** ROC Curves for Multi-Class Analysis

**Version** 0.1.0

**Description** Function `multiroc()` can be used for computing and visualizing Receiver Operating Characteristics (ROC) and Area Under the Curve (AUC) for multi-class classification problems. It supports both One-vs-One approach by M.Bishop, C. (2006, ISBN:978-0-387-31073-2) and One-vs-All approach by Murphy P., K. (2012, ISBN:9780262018029).

**License** GPL-3

**Encoding** UTF-8

**RoxygenNote** 7.2.3

**Imports** `ggplot2`, `pROC`

**NeedsCompilation** no

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**Repository** CRAN

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## Description

Function ‘`multiroc`’ can be used for computing and visualizing Receiver Operating Characteristics (ROC) and Area Under the Curve (AUC) for multi-class classification problems. It supports both one-vs-one and one-vs-all approaches.

**Usage**

```
multiroc(y, x, k, type = c("OvO", "OvA"), plot = TRUE, data)
```

**Arguments**

<code>y</code>	A string, dependent variable
<code>x</code>	A vector of strings, independent variables
<code>k</code>	The number of categories
<code>type</code>	A string, "OvO" for one-vs-one, "OvA" for one-vs-all approach
<code>plot</code>	A logical, TRUE for the plot of the curves, FALSE for the average AUC
<code>data</code>	A data frame, the dataset to use

**Value**

plot with ROC curves using `ggroc`, `pROC` (if `plot=TRUE`) or the average AUC (if `plot=FALSE`)

**Examples**

```
multiroc(y="Species",
         x=c("Petal.Width", "Petal.Length", "Sepal.Width", "Sepal.Length"),
         k=3, type="OvA"),
plot=TRUE,
data=iris)
multiroc(y="Species",
         x=c("Petal.Width", "Petal.Length", "Sepal.Width", "Sepal.Length"),
         k=3,
         type="OvO"),
plot=FALSE,
data=iris)
```

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