Package: Dogoftest (via r-universe)

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Title Distributed Online Goodness-of-Fit Tests for Distributed Datasets

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Version 0.1

Description Distributed Online Goodness-of-Fit Test can process the distributed datasets. The philosophy of the package is described in Guo G.(2024) <doi:10.1016/j.apm.2024.115709>.

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RoxygenNote 7.3.2

Imports stats

Suggests testthat (>= 3.0.0)

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NeedsCompilation no

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Depends R (>= 3.5.0)

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cvmgof — *Perform the Cramer-von Mises Goodness-of-Fit Test for Normality*

Description

Perform the Cramer-von Mises Goodness-of-Fit Test for Normality

Usage

```
cvmgof(x)
```

Arguments

x	A numeric vector containing the sample data.

Value

statistic	The value of the Cramer-von Mises test statistic.
p.value	The p-value for the test.
method	A character string describing the test.

Examples

```
# Example usage:
set.seed(123)
x <- rnorm(100)  # Generate a sample from a normal distribution
result <- cvmgof(x)
print(result)

# Example with non-normal data:
y <- rexp(100)  # Generate a sample from an exponential distribution
result <- cvmgof(y)
print(result)
```

ksgof — *Perform the Lilliefors (Kolmogorov-Smirnov) Goodness-of-Fit Test for Normality*

Description

Perform the Lilliefors (Kolmogorov-Smirnov) Goodness-of-Fit Test for Normality

Usage

```
ksgof(x)
```

Arguments

x	A numeric vector containing the sample data.

Value

statistic	The value of the Lilliefors (Kolmogorov-Smirnov) test statistic.
p.value	The p-value for the test.
method	A character string describing the test.

Examples

```
# Example usage:
set.seed(123)
x <- rnorm(100)  # Generate a sample from a normal distribution
result <- ksgof(x)
print(result)

# Example with non-normal data:
y <- rexp(100)  # Generate a sample from an exponential distribution
result <- ksgof(y)
print(result)
```

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qCvMgof *Calculate the Quantile of the Cramer-von Mises Goodness-of-Fit Statistic*

Description

This function calculates the quantile of the Cramer-von Mises goodness-of-fit statistic using the ‘uniroot‘ function to find the root of the given function.

Usage

```
qCvMgof(X, p)
```

Arguments

X	A numeric vector containing the sample data.
p	A numeric value representing the desired quantile probability.

Value

root	The quantile value corresponding to the given probability.

Examples

```
# Example usage:
set.seed(123)
X <- rnorm(100)  # Generate a sample from a normal distribution
p <- 0.95        # Desired quantile probability
result <- qCvMgof(X, p)
print(result)
```

`simpleCvMgof` *Perform a Simple Cramer-von Mises Goodness-of-Fit Test*

Description

This function performs a simple Cramer-von Mises goodness-of-fit test to assess whether a given sample comes from a uniform distribution. The test statistic and p-value are calculated based on the sorted sample data.

Usage

```
simpleCvMgof(X)
```

Arguments

`X`	A numeric vector containing the sample data.

Value

`statistic`	The value of the Cramer-von Mises test statistic.
`pvalue`	The p-value for the test.
`statname`	The name of the test statistic.

Examples

```
# Example usage:
set.seed(123)
X <- runif(100)  # Generate a sample from a uniform distribution
result <- simpleCvMgof(X)
print(result)

# Example with non-uniform data:
Y <- rnorm(100)  # Generate a sample from a normal distribution
result <- simpleCvMgof(Y)
print(result)
```

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