Package: simul (via r-universe)

September 5, 2024

Type Package

Title Fast Simultaneous Confidence Bands Based on the Efficient
Influence Function and Multiplier Bootstrap

Version 0.1.2

Description Compute critical values for constructing uniform
(simultaneous) confidence bands. The critical value is
calculated using a multiplier bootstrap of the empirical
efficient influence function as described by Kennedy (2019)
<doi:10.1080/01621459.2017.1422737>. The multiplier bootstrap
does not require resampling of the data but only simulation of
the multipliers and is thus computationally efficient.

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

LinkingTo Rcpp

Imports Rcpp

Suggests testthat

URL https://github.com/nt-williams/simul#readme

Depends R (>= 2.10)

Repository https://nt-williams.r-universe.dev

RemoteUrl https://github.com/nt-williams/simul

RemoteRef HEAD

RemoteSha a7db439ac1505731706bcf325d26edde419559c3

Contents

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eif   *Simulated Efficient Influence Functions*

Description

A list of 5 simulated influence functions.

Usage

```
eif
```

Format

An object of class `list` of length 5.

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simul   *Find Simultaneous Confidence Band Critical Value*

Description

Find Simultaneous Confidence Band Critical Value

Usage

```
simul(x, eif, nobs, reps = 1e+05, level = 0.95)
```

Arguments

x	A list of parameter estimates.
eif	A list of empirical efficient influence functions corresponding to the estimates in x.
nobs	The number of observations.
reps	The number of repetitions to use for the multiplier bootstrap, the default is 1e5.
level	The confidence level for the critical value should be calculated for, the default is 0.95.

Value

The estimated critical value satisfying the requirements for a uniform confidence band around all estimates.

Examples

```
data(eif)
psi <- lapply(eif, function(x) mean(x))
n <- length(eif[[1]])
simul(psi, eif, n)
```

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