Package: ipfp (via r-universe)

October 28, 2026

Type Package

Title Fast Implementation of the Iterative Proportional Fitting Procedure in C

Version 1.0.2

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Description A fast (C) implementation of the iterative proportional fitting procedure.

License Apache License (== 2.0)

LazyLoad yes

URL https://github.com/awblocker/ipfp

RoxygenNote 7.1.2

NeedsCompilation yes

Repository https://cran.r-universe.dev

Date/Publication 2022-05-05 05:50:05 UTC

RemoteUrl https://github.com/cran/ipfp

RemoteRef HEAD

RemoteSha c7506af833b0fd2014e14b6882b4cee1ebf38b62

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ipfp *Function to run IPFP (iterative proportional fitting procedure)*

Description

Use IPFP starting from x0 to produce vector x s.t. Ax = y within tolerance. Need to ensure that x0 > 0.

Usage

```
ipfp(
  y,
  A,
  x0,
  tol = sqrt(.Machine$double.eps),
  maxit = 1000,
  verbose = FALSE,
  full = FALSE
)
```

Arguments

y	numeric constraint vector (length nrow)
A	constraint matrix (nrow x ncol)
x0	numeric initial vector (length ncol)
tol	numeric tolerance for IPFP; defaults to sqrt(.Machine$double.eps)
maxit	integer maximum number of iterations for IPFP; defaults to 1e3
verbose	logical parameter to select verbose output from C function
full	logical parameter to select full return (with diagnostic info)

Value

if not full, a vector of length ncol containing solution obtained by IPFP. If full, a list containing solution (as x), the number of iterations (as iter), and the L2 norm of Ax - y (as errNorm)

Examples

```
A <- matrix(c(1,0,0, 1,0,0, 0,1,0, 0,1,0, 0,0,1), nrow=3)
x <- rgamma(ncol(A), 10, 1/100)
y <- A %*% x
x0 <- x * rgamma(length(x), 10, 10)
ans <- ipfp(y, A, x0, full=TRUE)
print(ans)
print(x)
```

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