Package 'cmtkr'

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Type Package

Title Wrapper for the Computational Morphometry Toolkit ('CMTK') Library

Version 0.2.2

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Description Provides R bindings for selected components of the Computational Morphometry Toolkit ('CMTK') for image registration and point transformation. A subset of the 'C++' source code required for point transforms is bundled with 'cmtkr'. This allows direct calls into the 'CMTK' library, avoiding command-line invocations and providing order-of-magnitude speed improvements. Additional 'CMTK' functionality may be wrapped in future releases. 'CMTK' is described in Rohlfing T and Maurer CR (2003) <doi:10.1109/titb.2003.808506>.

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Imports Rcpp (>= 0.11.2)

LinkingTo Rcpp

Suggests testthat, nat

SystemRequirements zlib

Encoding UTF-8

RoxygenNote 7.3.3

URL https://github.com/jefferis/cmtkr

BugReports https://github.com/jefferis/cmtkr/issues

NeedsCompilation yes

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`cmtkr-package` *R wrapper for CMTK*

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- SRI International (Copyright holder for CMTK library) [copyright holder]
- Google, Inc. (Copyright holder for CMTK library contributions) [copyright holder]

See Also

Useful links:

- https://github.com/jefferis/cmtkr
- Report bugs at https://github.com/jefferis/cmtkr/issues

streamxform *transform 3D points using one or more CMTK registrations*

Description

transform 3D points using one or more CMTK registrations

Usage

```
streamxform(points, reglist, inversionTolerance = 1e-08, affineonly = FALSE)
```

Arguments

points	an Nx3 matrix of 3D points
reglist	A character vector specifying registrations. See details.
inversionTolerance	the precision of the numerical inversion when transforming in the inverse direction.
affineonly	Whether to apply only the affine portion of transforms default FALSE.

Details

To transform points from sample to reference space, you will need to use the inverse transformation. This can be achieved by preceding the registration with a `--inverse` flag. When multiple registrations are being used the are ordered from sample to reference brain.

Value

An Nx3 numeric matrix with the same dimensions as `points` containing transformed coordinates. Rows for points that cannot be transformed are returned as `NA_real_`.

Examples

```
m=matrix(rnorm(30,mean = 50), ncol=3)
reg=system.file("extdata","cmtk","FCWB_JFRC2_01_warp_level-01.list", package='cmtkr')
# from reference to sample
streamxform(m, reg)

# from sample to reference
streamxform(m, c("--inverse", reg))

## Not run:
# concatenating 3 registrations to map S -> B1 -> B2 -> T
# the first two registrations are inverted, the last is not.
streamxform(m, c("--inverse", StoB1, "--inverse", B1toB2, TtoB2))

## End(Not run)
```

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