Package: jage (via r-universe)

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Type Package

Title Estimation of Developmental Age

Version 0.1.0

Description Bayesian methods for estimating developmental age from ordinal dental data. For an explanation of the model used, see Konigsberg (2015) <doi:10.3109/03014460.2015.1045430>. For details on the conditional correlation correction, see Sgheiza (2022) <doi:10.1016/j.forsciint.2021.111135>. Dental scoring is based on Moorrees, Fanning, and Hunt (1963) <doi:10.1177/00220345630420062701>.

Imports pracma, data.table, mvtnorm, stats

License GPL

Encoding UTF-8

LazyData true

RoxygenNote 7.2.2

Depends R (>= 2.10)

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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`find_fuzzies.f` *A function for finding and correcting fuzzy posteriors produced by mvcp_est.f*

Description

A function for finding and correcting fuzzy posteriors produced by mvcp_est.f

Usage

```
find_fuzzies.f(cases, prior)
```

Arguments

`cases`	as input data.table of rows of collapsed dental development scores, or vector of scores from single individual
`prior`	as string argument for desired prior

Value

for one case, list object with interpretation and data.table of true age, lower and upper bounds of HDR, mode, and posterior. If multiple cases are entered, only the data.table is returned.

Examples

```
find_fuzzies.f(c(NA,NA,9,10,11,14,15,10,15,11),prior="jeff")
```

`mfh_collapse` *A function for collapsing Moorrees et al. (1963) dental development stages for use in find_fuzzies.f and mvcp_est.f*

Description

WARNING: this function is based on scoring with an additional crypt stage. Pre-collapse staging: 0-no crypt, 1-crypt, 2-Ci, 3-Cco, 4-Coc, 5-Cr1/2, 6-Cr3/4, 7-Crc, 8-Ri, 9-Cli, 10-R1/4, 11-R1/2, 12-R3/4, 13-Rc, 14-A1/2, 15-Ac

Usage

```
mfh_collapse(cases)
```

Arguments

`cases`	as input data.table of Moorrees et al. dental development scores, or vector of scores from single individual

Value

returns data.table of collapsed scores

Examples

```
mfh_collapse(c(NA,NA,15,15,14,12,11,15,11,8))
```

`mv.probit` *Age estimation from a single case, called by mvcp_est.f*

Description

Age estimation from a single case, called by mvcp_est.f

Usage

```
mv.probit(case, prior, drop)
```

Arguments

`case`	as input vector from object dat
`prior`	as string argument for desired prior
`drop`	as column to be dropped based on outcome of find_fuzzies.f

Value

returns probs as a vector of posterior probabilities

`mvcp_est.f` *A function for estimating age from 8 teeth via multivariate cumulative probit and a user-determined prior. Call directly iff you do NOT want to correct for fuzzy posteriors. Call find_fuzzies.f otherwise.*

Description

A function for estimating age from 8 teeth via multivariate cumulative probit and a user-determined prior. Call directly iff you do NOT want to correct for fuzzy posteriors. Call find_fuzzies.f otherwise.

Usage

```
mvcp_est.f(prior, dat)
```

Arguments

prior	as string argument for desired prior
dat	as input data.table of rows of dental development scores, may have only 1 row

Value

returns postm as a data.table of posterior probability distributions

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nmdid.test *test data from NMDID*

Description

Collapsed London Atlas scores of dental development from NMDID images by Stull. Do not apply mfh_collapse before using. Stages are already collapsed!

Usage

```
nmdid.test
```

Format

'nmdid.test' A data.table with 188 rows and 10 columns:

drn Decedent record number from NMDID

age age in decimal years

t31, t32, t33, t34, t35, t36, t37, t38 Collapsed London atlas score of left permanent mandibular teeth I1-M3

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