Package 'LargeScalePopEst'

May 1, 2017

Title Large-Scale Population-Level Evidence Generation

Version 0.1.1

Author Martijn J. Schuemie [aut, cre],
Patrick B. Ryan [aut]

Maintainer Martijn J. Schuemie <schuemie@ohdsi.org>

Description This study aims to generate population-
level evidence on treatments used for major depressive disorder.

Depends R (>= 3.1),
DatabaseConnector

Imports Cyclops,
DBI,
ff,
ffbase,
RJDBC,
SqlRender,
FeatureExtraction,
CohortMethod (>= 2.1.1),
EmpiricalCalibration,
MethodEvaluation,
OhdsiSharing

Suggests testthat,
meta,
ggplot2

License Apache License 2.0

LazyData true

RoxygenNote 6.0.1

R topics documented:

`analysePsDistributions` *Analyse propensity score distributions*

Description

Analyse propensity score distributions

Usage

```
analysePsDistributions(workFolder)
```

Arguments

`workFolder`	Name of local folder to place results; make sure to use forward slashes (/)

Details

This function plots all propensity score distributions, and computes AUC and equipoise for every exposure pair.

`calibrateEstimatesAndPvalues` *Created calibrated confidence intervals, estimates, and p-values.*

Description

Created calibrated confidence intervals, estimates, and p-values.

Usage

```
calibrateEstimatesAndPvalues(workFolder)
```

Arguments

`workFolder`	Name of local folder to place results; make sure to use forward slashes (/). Do not use a folder on a network drive since this greatly impacts performance.

createAnalysesDetails *Create the analyses details*

Description

Create the analyses details

Usage

```
createAnalysesDetails(outputFolder)
```

Arguments

outputFolder	Name of local folder to place results; make sure to use forward slashes (/)

Details

This function creates files specifying the analyses that will be performed.

createCohorts *Create the exposure and outcome cohorts*

Description

Create the exposure and outcome cohorts

Usage

```
createCohorts(connectionDetails, cdmDatabaseSchema, workDatabaseSchema,
  studyCohortTable = "ohdsi_cohorts",
  exposureCohortSummaryTable = "ohdsi_cohort_summary", oracleTempSchema,
  workFolder)
```

Arguments

connectionDetails	An object of type connectionDetails as created using the createConnectionDetails function in the DatabaseConnector package.
cdmDatabaseSchema	Schema name where your patient-level data in OMOP CDM format resides. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.
workDatabaseSchema	Schema name where intermediate data can be stored. You will need to have write priviliges in this schema. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.
studyCohortTable	The name of the table that will be created in the work database schema. This table will hold the exposure and outcome cohorts used in this study.

exposureCohortSummaryTable
: The name of the table that will be created in the work database schema. This table will hold the summary of the exposure cohorts used in this study.

oracleTempSchema
: Should be used in Oracle to specify a schema where the user has write priviliges for storing temporary tables.

workFolder
: Name of local folder to place results; make sure to use forward slashes (/)

Details

This function will create the exposure and outcome cohorts following the definitions included in this package.

`execute` *Execute OHDSI Large-Scale Population-Level Evidence Generation study*

Description

Execute OHDSI Large-Scale Population-Level Evidence Generation study

Usage

```
execute(connectionDetails, cdmDatabaseSchema, oracleTempSchema,
  workDatabaseSchema, studyCohortTable, exposureCohortSummaryTable, workFolder,
  maxCores, createCohorts = TRUE, fetchAllDataFromServer = TRUE,
  injectSignals = TRUE, generateAllCohortMethodDataObjects = TRUE,
  runCohortMethod = TRUE)
```

Arguments

connectionDetails
: An object of type `connectionDetails` as created using the `createConnectionDetails` function in the DatabaseConnector package.

cdmDatabaseSchema
: Schema name where your patient-level data in OMOP CDM format resides. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.

oracleTempSchema
: Should be used in Oracle to specify a schema where the user has write priviliges for storing temporary tables.

workDatabaseSchema
: Schema name where intermediate data can be stored. You will need to have write priviliges in this schema. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.

studyCohortTable
: The name of the table that will be created in the work database schema. This table will hold the exposure and outcome cohorts used in this study.

exposureCohortSummaryTable
: The name of the table that will be created in the work database schema. This table will hold summary data on the exposure cohorts used in this study.

`workFolder` Name of local folder to place results; make sure to use forward slashes (/). Do not use a folder on a network drive since this greatly impacts performance.

`maxCores` How many parallel cores should be used? If more cores are made available this can speed up the analyses.

`createCohorts` Create the studyCohortTable and exposureCohortSummaryTable tables with the exposure and outcome cohorts?

`fetchAllDataFromServer`
Fetch all relevant data from the server?

`injectSignals` Inject signals to create synthetic controls?

`generateAllCohortMethodDataObjects`
Create the cohortMethodData objects from the fetched data and injected signals?

`runCohortMethod`
Run the CohortMethod package to produce the outcome models.

Details

This function executes the OHDSI Large-Scale Population-Level Evidence Generation study.

`fetchAllDataFromServer`

Fetch all data on the cohorts for analysis

Description

Fetch all data on the cohorts for analysis

Usage

```
fetchAllDataFromServer(connectionDetails, cdmDatabaseSchema, workDatabaseSchema,
  studyCohortTable = "ohdsi_cohorts", oracleTempSchema, workFolder)
```

Arguments

`connectionDetails`
An object of type `connectionDetails` as created using the `createConnectionDetails` function in the DatabaseConnector package.

`cdmDatabaseSchema`
Schema name where your patient-level data in OMOP CDM format resides. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.

`workDatabaseSchema`
Schema name where intermediate data can be stored. You will need to have write priviliges in this schema. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.

`studyCohortTable`
The name of the study cohort table in the work database schema.

`oracleTempSchema`
Should be used in Oracle to specify a schema where the user has write priviliges for storing temporary tables.

`workFolder` Name of local folder to place results; make sure to use forward slashes (/)

`exposureCohortSummaryTable`
The name of the exposure summary table in the work database schema.

Details

This function will create covariates and fetch outcomes and person information from the server.

`filterByExposureCohortsSize` *Filter exposure pairs by size of the cohorts*

Description

Filter exposure pairs by size of the cohorts

Usage

```
filterByExposureCohortsSize(workFolder, minCohortsSize = 2500)
```

Arguments

`workFolder`	Name of local folder to place results; make sure to use forward slashes (/)
`minCohortsSize`	Minimum number of people that have to be in each cohort to keep a pair of cohorts.

`generateAllCohortMethodDataObjects` *Construct all cohortMethodData object*

Description

Construct all cohortMethodData object

Usage

```
generateAllCohortMethodDataObjects(workFolder)
```

Arguments

`workFolder`	Name of local folder to place results; make sure to use forward slashes (/)

Details

This function constructs all cohortMethodData objects using the data fetched earlier using the `fetchAllDataFromServer` function.

injectSignals *Inject outcomes on top of negative controls*

Description

Inject outcomes on top of negative controls

Usage

```
injectSignals(connectionDetails, cdmDatabaseSchema, workDatabaseSchema,
  studyCohortTable = "ohdsi_cohorts", oracleTempSchema, workFolder,
  exposureOutcomePairs = NULL, maxCores = 4)
```

Arguments

connectionDetails	An object of type connectionDetails as created using the createConnectionDetails function in the DatabaseConnector package.
cdmDatabaseSchema	Schema name where your patient-level data in OMOP CDM format resides. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.
workDatabaseSchema	Schema name where intermediate data can be stored. You will need to have write priviliges in this schema. Note that for SQL Server, this should include both the database and schema name, for example 'cdm_data.dbo'.
studyCohortTable	The name of the study cohort table in the work database schema.
oracleTempSchema	Should be used in Oracle to specify a schema where the user has write priviliges for storing temporary tables.
workFolder	Name of local folder to place results; make sure to use forward slashes (/)
maxCores	How many parallel cores should be used? If more cores are made available this can speed up the analyses.
exposureCohortSummaryTable	The name of the exposure summary table in the work database schema.

Details

This function injects outcomes on top of negative controls to create controls with predefined relative risks greater than one.

LargeScalePopEst *LargeScalePopEst*

Description

LargeScalePopEst

`runCohortMethod` *Run the cohort method package*

Description

Run the cohort method package

Usage

```
runCohortMethod(workFolder, maxCores = 4)
```

Arguments

`workFolder`	Name of local folder to place results; make sure to use forward slashes (/)
`maxCores`	How many parallel cores should be used? If more cores are made available this can speed up the analyses.

Details

Runs the cohort method package to produce propensity scores and outcome models.

Index