Package: handwriterApp (via r-universe)

October 24, 2026

Title A 'shiny' Application for Handwriting Analysis

Version 2.0.0

Description Perform statistical writership analysis of scanned handwritten documents with a 'shiny' app for 'handwriter'.

License GPL (>= 3)

Encoding UTF-8

RoxygenNote 7.3.2

Depends R (>= 2.10)

LazyData true

Imports bslib, dplyr, ggplot2, handwriter, handwriterRF, magick, magrittr, rmarkdown, shiny, shinycssloaders, shinyFiles, shinyjs, stringr, tidyr

Suggests knitr, testthat (>= 3.0.0)

Config/testthat/edition 3

URL https://github.com/CSAFE-ISU/handwriterApp

BugReports https://github.com/CSAFE-ISU/handwriterApp/issues

NeedsCompilation no

Author Iowa State University of Science and Technology on behalf of its Center for Statistics and Applications in Forensic Evidence [aut, cph, fnd], Stephanie Reinders [aut, cre]

Maintainer Stephanie Reinders <srein@iastate.edu>

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

Date/Publication 2024-11-13 17:50:02 UTC

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

RemoteRef HEAD

RemoteSha cc804228de7f874738e91139cb3e6db00627f4f1

Contents

handwriterApp 2
plot_writer_profiles 3
rates 3
templateK40 5

Index **7**

`handwriterApp` *Handwriter Application*

Description

Lauch a 'shiny' application for 'handwriter'.

Usage

```
handwriterApp(...)
```

Arguments

`...`	Optional arguments passed to shiny::shinyApp

Value

No return value, called to launch 'shiny' app

A Shiny app

Examples

```
## Not run:
handwriterApp()

## End(Not run)
```

plot_writer_profiles *Plot Writer Profiles*

Description

Create a line plot of cluster fill rates for one or more documents, where the cluster fill rates serve as writer profiles. Each cluster fill rates for each document are plotted as different colored lines.

Usage

```
plot_writer_profiles(rates)
```

Arguments

rates	A data frame of cluster fill rates created with get_cluster_fill_rates

Value

A line plot

Examples

```
plot_writer_profiles(rates)
```

rates *Cluster Fill Rates*

Description

A data frame of cluster fill rates for two handwritten documents: w0004_s01_pLND_r01.png and w0004_s01_pWOZ_r02.png. Both documents are from the CSAFE Handwriting Database.

Usage

```
rates
```

Format

A data frame

docname The file name of the document without the file extension.

total_graphs The total number of graphs in the document.

cluster1 The proportion of graphs in cluster 1

cluster2 The proportion of graphs in cluster 2

cluster3 The proportion of graphs in cluster 3
cluster4 The proportion of graphs in cluster 4
cluster5 The proportion of graphs in cluster 5
cluster6 The proportion of graphs in cluster 6
cluster7 The proportion of graphs in cluster 7
cluster8 The proportion of graphs in cluster 8
cluster9 The proportion of graphs in cluster 9
cluster10 The proportion of graphs in cluster 10
cluster11 The proportion of graphs in cluster 11
cluster12 The proportion of graphs in cluster 12
cluster13 The proportion of graphs in cluster 13
cluster14 The proportion of graphs in cluster 14
cluster15 The proportion of graphs in cluster 15
cluster16 The proportion of graphs in cluster 16
cluster17 The proportion of graphs in cluster 17
cluster18 The proportion of graphs in cluster 18
cluster19 The proportion of graphs in cluster 19
cluster20 The proportion of graphs in cluster 20
cluster21 The proportion of graphs in cluster 21
cluster22 The proportion of graphs in cluster 22
cluster23 The proportion of graphs in cluster 23
cluster24 The proportion of graphs in cluster 24
cluster25 The proportion of graphs in cluster 25
cluster26 The proportion of graphs in cluster 26
cluster27 The proportion of graphs in cluster 27
cluster28 The proportion of graphs in cluster 28
cluster29 The proportion of graphs in cluster 29
cluster30 The proportion of graphs in cluster 30
cluster31 The proportion of graphs in cluster 31
cluster32 The proportion of graphs in cluster 32
cluster33 The proportion of graphs in cluster 33
cluster34 The proportion of graphs in cluster 34
cluster35 The proportion of graphs in cluster 35
cluster36 The proportion of graphs in cluster 36
cluster37 The proportion of graphs in cluster 37
cluster38 The proportion of graphs in cluster 38
cluster39 The proportion of graphs in cluster 39
cluster40 The proportion of graphs in cluster 40

Details

'handwriter' splits handwriting in the documents into component shapes called *graphs*. The graphs are sorted into 40 clusters using the cluster template 'templateK40'. The rates data frame shows the proportion of graphs from each document assigned to each cluster. The rates estimate a writer profile for the writer of a document.

Examples

```
plot_writer_profiles(rates)
```

`templateK40` *Cluster Template with 40 Clusters*

Description

A cluster template created by 'handwriter' with K=40 clusters. This template was created from 100 handwriting samples from the CSAFE Handwriting Database. This template is suitable for casework.

Usage

```
templateK40
```

Format

A list containing the contents of the cluster template.

centers_seed An integer for the random number generator use to select the starting cluster centers for the K-Means algorithm.

cluster A vector of cluster assignments for each graph used to create the cluster template. The clusters are numbered sequentially 1, 2,...,K.

centers The final cluster centers produced by the K-Means algorithm.

K The number of clusters in the template.

n The number of training graphs to used to create the template.

docnames A vector that lists the training document from which each graph originated.

writers A vector that lists the writer of each graph.

iters The maximum number of iterations for the K-means algorithm.

changes A vector of the number of graphs that changed clusters on each iteration of the K-means algorithm.

outlierCutoff A vector of the outlier cutoff values calculated on each iteration of the K-means algorithm.

stop_reason The reason the K-means algorithm terminated.

wcd The within cluster distances on the final iteration of the K-means algorithm. More specifically, the distance between each graph and the center of the cluster to which it was assigned on each iteration. The output of 'handwriter::make_clustering_template' stores the within cluster distances on each iteration, but the previous iterations were removed here to reduce the file size.

wcss A vector of the within-cluster sum of squares on each iteration of the K-means algorithm.

Details

'handwriter' splits handwriting samples into component shapes called *graphs*. The graphs are sorted into 40 clusters with a K-Means algorithm. See 'handwriter' for more details.

Examples

```
# view number of clusters
templateK40$K

# view number of iterations
templateK40$iters

# view cluster centers
templateK40$centers
```

Index

∗ **Shiny**
handwriterApp, 2
∗ **cluster**
rates, 3
templateK40, 5

get_cluster_fill_rates, *3*

handwriterApp, 2

plot_writer_profiles, 3

rates, 3

templateK40, 5