Package: visvalingam (via r-universe)

September 16, 2024

Type Package

Title Visvalingam-Wyatt Polyline Simplification

Version 0.1.2

Author mikefc

Maintainer mikefc <mikefc@coolbutuseless.com>

Description Visvalingam-Wyatt polyline simplification.

License MIT + file LICENSE

Encoding UTF-8

LazyData true

RoxygenNote 7.1.2

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

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

RemoteUrl https://github.com/coolbutuseless/visvalingam

RemoteRef HEAD

RemoteSha a56e885e0c737c8f6de7c5303b853614409a7b2f

Contents

vis_effective_areas *Calculation of* effective areas *for all nodes according to Visvalingam's line simplification algorithm*

Description

In visvalingam's algorithm, each vertex in the line has an associated *effective area*. This value is the area of the triangle defined by the current vertex and its two neighbours at the time when the simplification process deletes it as a node.

Usage

```
vis_effective_areas(x, y)
```

Arguments

x	points
y	points

Details

This function calculates the effective area for all points (with `area = Inf` for the frist and last point). This value could then be used to set a threshold level and select subsets of points.

Value

numeric vector of areas - one for each point. The first and last points are assigned an infinite area. Runs of duplicate points will have an effective area of zero.

Examples

```
set.seed(1)
N <- 10
x <- runif(N)
y <- runif(N)
vis_effective_areas(x, y)
```

vis_indices *Line simplification using Visvalingam's algorithm*

Description

Visvalingam's algorithm iteratively deletes vertices from a line based up the `effecive area` of the triangle defined by the vertex and its current neighbours.

Usage

```
vis_indices(x, y, n)
```

Arguments

x	points
y	points
n	number of points to keep

Value

logical vector giving location of the n simplified indices

Examples

```
set.seed(1)
N <- 10
x <- runif(N)
y <- runif(N)
vis_indices(x, y, 4)
```

---

vis_simplify *Line simplification using Visvalingam's algorithm*

Description

Visvalingam's algorithm iteratively deletes vertices from a line based up the effecive area of the triangle defined by the vertex and its current neighbours.

Usage

```
vis_simplify(x, y, n)
```

Arguments

x, y	points
n	number of points to keep

Value

list with elements x and y of the simplified line

Examples

```
set.seed(1)
N <- 10
x <- runif(N)
y <- runif(N)
vis_simplify(x, y, 4)
```

`vis_simplify_r` *Naive R implememtation of Visvalingam's line simplification algorithm*

Description

This R code is going to remain unoptimised as a readable demonstration of the core algorithm.

Usage

```
vis_simplify_r(x, y, n)
```

Arguments

`x, y`	points
`n`	number of points to keep

Examples

```
set.seed(1)
N <- 10
x <- runif(N)
y <- runif(N)
vis_simplify_r(x, y, 4)
```

Index