Package ‘concaveman’

May 11, 2020

Type Package
Title A Very Fast 2D Concave Hull Algorithm
Version 1.1.0
Description The concaveman function ports the ‘concaveman’ (<https://github.com/mapbox/concaveman>) library from ‘mapbox’. It computes the concave polygon(s) for one or several set of points.
License GPL-3
Encoding UTF-8
LazyData true
Depends R (>= 2.10)
Imports V8, sf, magrittr, jsonlite, dplyr
RoxygenNote 7.1.0
Suggests testthat
URL https://joelgombin.github.io/concaveman/,
http://www.github.com/joelgombin/concaveman/
BugReports http://www.github.com/joelgombin/concaveman/issues
SystemRequirements GDAL (>= 2.0.0), GEOS (>= 3.3.0), PROJ.4 (>= 4.8.0)
NeedsCompilation no
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R topics documented:
concaveman ......................................................... 2
points ............................................................... 3
Description
This package is a simple R port (through V8) of a JavaScript library by Vladimir Agafonkin. The concaveman function ports the concaveman library from mapbox. It computes the concave polygon for one set of points.

Usage
concaveman(points, concavity, length_threshold)
## S3 method for class 'matrix'
concaveman(points, concavity = 2, length_threshold = 0)
## S3 method for class 'sf'
concaveman(points, concavity = 2, length_threshold = 0)

Arguments
- points: the points for which the concave hull must be computed. Can be represented as a matrix of coordinates or an sf object.
- concavity: a relative measure of concavity. 1 results in a relatively detailed shape, Infinity results in a convex hull. You can use values lower than 1, but they can produce pretty crazy shapes.
- length_threshold: when a segment length is under this threshold, it stops being considered for further detalization. Higher values result in simpler shapes.

Details
For details regarding the implementation, please see the original javascript library github page. This is just a thin wrapper, via V8.

Value
an object of the same class as points: a matrix of coordinates or an sf object.

Examples
data(points)
polygons <- concaveman(points)
plot(points)
plot(polygons, add = TRUE)
points

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<table>
<thead>
<tr>
<th>points</th>
<th>Fixtures data</th>
</tr>
</thead>
</table>

**Description**

This is just a test dataset which comes from the original mapbox library.

**Usage**

points

**Format**

an `sf` object with a 1000 points. Each of them is part of a group, indicated by variable k (generated by a k-means algorithm).

**Source**

https://github.com/mapbox/concaveman/blob/master/test/fixtures/points-1k.json
Index

*Topic *datasets
  points, 3

concaveman, 2

points, 3