



implexis GmbH

Interactive spatial clusters

Malte Grosser

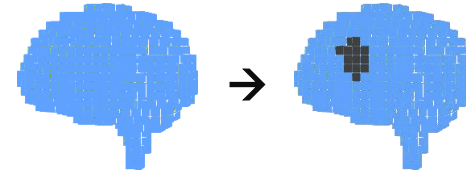
Business Analyst implexis analytics GmbH

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Business Analyst implexis analytics GmbH



- M. Sc. Mathematik
- 2,5 Jahre Erfahrung im BI-Umfeld
- Doktorand in der Neuroradiologie der Hamburger Uniklinik (UKE)



- Spezialgebiete: Data Science und R
- malte.grosser@implexis-analytics.com

Planung einer



1. Finde Geodaten zu 1000 Adressen!
2. Visualisiere die Daten auf einer Karte!
3. Clustere die Adressen!





```
> df %>% head %>% view
```

firma	strasse	plz	ort	bundesland	land
firma 1	Hansaallee 1	40549	Düsseldorf	Nordrhein-Westfalen	D
firma 2	Kardinal-Faulhaber-Straße 1	80333	München	Bayern	D
firma 3	Dieselstraße 12	72555	Metzingen	Baden-Württemberg	D
firma 4	Hellerwaldstraße 1	56154	Boppard	Rheinland-Pfalz	D
firma 5	Friedrich-Uhde-Straße 15	44141	Dortmund	Nordrhein-Westfalen	D
firma 6	Dunlopstraße 2	63450	Hanau	Hessen	D

```
> df <- df %>%  
  mutate(address = str_c(strasse, ort, plz, land, sep = ", "))
```

```
> df %>% head %>% view
```

firma	strasse	plz	ort	bundesland	land	address
firma 1	Hansaallee 1	40549	Düsseldorf	Nordrhein-Westfalen	D	
firma 2	Kardinal-Faulhaber-Straße 1	80333	München	Bayern	D	
firma 3	Dieselstraße 12	72555	Metzingen	Baden-Württemberg	D	
firma 4	Hellerwaldstraße 1	56154	Boppard	Rheinland-Pfalz	D	
firma 5	Friedrich-Uhde-Straße 15	44141	Dortmund	Nordrhein-Westfalen	D	
firma 6	Dunlopstraße 2	63450	Hanau	Hessen	D	

```
> df %>% head %>% view
```

firma	strasse	plz	ort	bundesland	land	address
firma 1	Hansaallee 1	40549	Düsseldorf	Nordrhein-Westfalen	D	Hansaallee 1, Düsseldorf, 40549, D
firma 2	Kardinal-Faulhaber-Straße 1	80333	München	Bayern	D	Kardinal-Faulhaber-Straße 1, München, 80333, D
firma 3	Dieselstraße 12	72555	Metzingen	Baden-Württemberg	D	Dieselstraße 12, Metzingen, 72555, D
firma 4	Hellerwaldstraße 1	56154	Boppard	Rheinland-Pfalz	D	Hellerwaldstraße 1, Boppard, 56154, D
firma 5	Friedrich-Uhde-Straße 15	44141	Dortmund	Nordrhein-Westfalen	D	Friedrich-Uhde-Straße 15, Dortmund, 44141, D
firma 6	Dunlopstraße 2	63450	Hanau	Hessen	D	Dunlopstraße 2, Hanau, 63450, D

```
> library(placement)
> df_geocodes <- geocode_url(df[, c("address"), drop = TRUE],
                             privkey = "",
                             clean = TRUE)
```

```
> df <- cbind.data.frame(df, df_geocodes)
> df %>% head %>% view
```

firma	strasse	plz	ort	bundesland	land	address	lat	lng	location_type	status
firma 1	Hansaallee 1	40549	Düsseldorf	Nordrhein-Westfalen	D	Hansaallee 1, Düsseldorf, 40549, D				
firma 2	Kardinal-Faulhaber-Straße 1	80333	München	Bayern	D	Kardinal-Faulhaber-Straße 1, München, 80333, D				
firma 3	Dieselstraße 12	72555	Metzingen	Baden-Württemberg	D	Dieselstraße 12, Metzingen, 72555, D				
firma 4	Hellerwaldstraße 1	56154	Boppard	Rheinland-Pfalz	D	Hellerwaldstraße 1, Boppard, 56154, D				
firma 5	Friedrich-Uhde-Straße 15	44141	Dortmund	Nordrhein-Westfalen	D	Friedrich-Uhde-Straße 15, Dortmund, 44141, D				
firma 6	Dunlopstraße 2	63450	Hanau	Hessen	D	Dunlopstraße 2, Hanau, 63450, D				

gallery.htmlwidgets.org

Meistbesucht Erste Schritte SelectorGadget

htmlwidgets for R - gallery

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77 registered widgets available to explore

Sort: Github stars

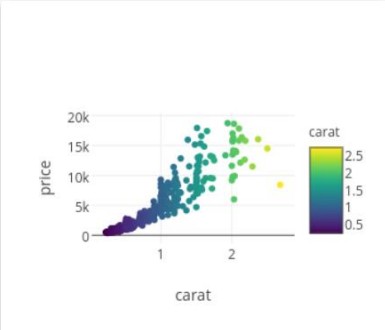
Text Filter: search name, author, de

Author Filter

Tag Filter


CRAN Only

Showing 33 of 77

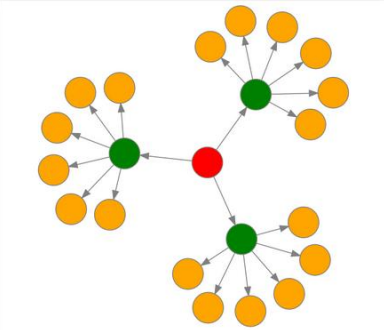



price

carat

plotly  852


Create interactive web graphics via Plotly's JavaScript granhinn library




DiagrammerR  670

Easily create graph diagrams using R.

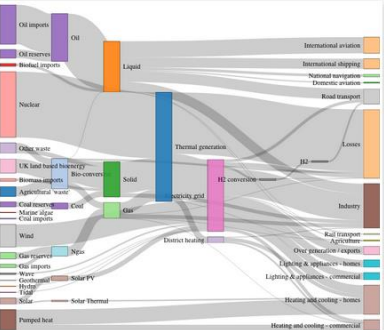
author: rich-iannone




Leaflet

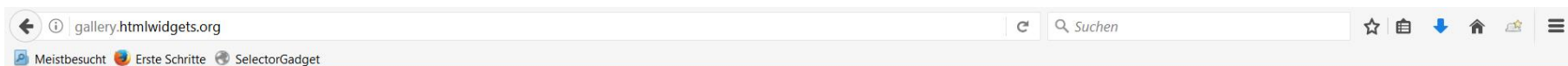
leaflet  298

Leaflet is an open-source JavaScript library for interactive maps. This package makes it easy to



networkD3  297

A port of Christopher Gandrud's d3Network package to the htmlwidgets framework



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Sort: Github stars Text Filter: search name, author, describe Author Filter: Tag Filter: maps (6) CRAN Only: ☐

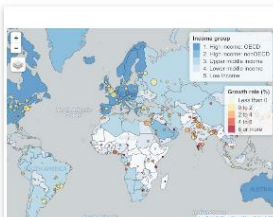
Showing 6 of 77



leaflet 299

Leaflet is an open-source JavaScript library for interactive maps. This package makes it easy to create Leaflet maps from R.

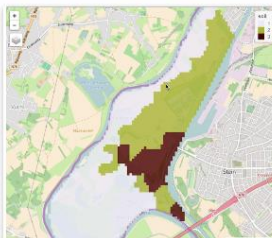
• author: [rstudio](#)
• tags: [visualization](#), [maps](#)
• js libraries: [leaflet](#)



tmap 117

Thematic maps for visualizing geographic statistical data.

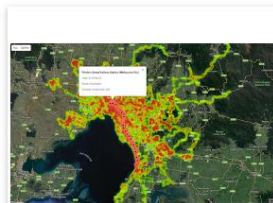
• author: [mtenekes](#)
• tags: [visualization](#), [maps](#)
• js libraries: [leaflet](#)



mapview 82

Interactive viewing of spatial objects in R.

• author: [tim-salabim](#)
• tags: [visualization](#), [maps](#)
• js libraries: [leaflet](#), [glify.js](#), [jquery](#)



googleway 31

Interactive Google Maps

• author: [SymbolixAU](#)
• tags: [visualization](#), [maps](#)
• js libraries: [Google Maps Javascript API](#)



datamaps 8

An htmlwidgets binding for the datamaps package.

• author: [ramnathv](#)
• tags: [visualization](#), [maps](#)
• js libraries: [datamaps.d3](#)



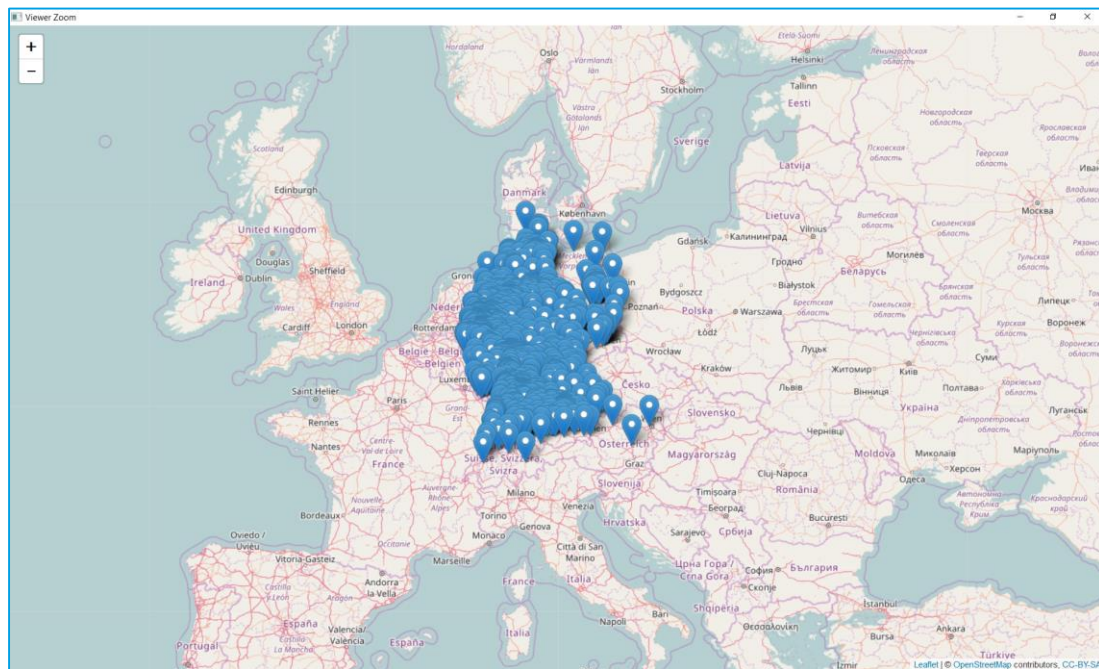
greatCircles 6

Create great circles arcs via d3, Shiny, htmlwidgets and R.

• author: [homeaway](#)
• tags: [visualization](#), [maps](#)
• js libraries: [d3](#)

Built with materialize-css, isotopo, and jekyll by @hafenstats.


```
> library(leaflet)
> leaflet(df) %>%
  addTiles() %>%
  addMarkers()
```



Leaflet for R

Introduction

The Map Widget

Basemaps

Markers

Popups

Lines and Shapes

JSON

Raster Images

Shiny Integration

Colors

Legends

Show/Hide Layers

Markers

Use markers to call out points on the map. Marker locations are expressed in latitude/longitude coordinates, and can either appear as icons or as circles. You can use `SpatialPoints`, `SpatialPointsDataFrame`, or a two-column numeric matrix (first column is longitude, second column is latitude) as data objects.

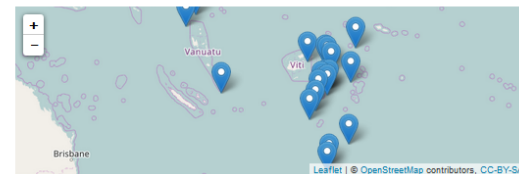
You can also use a data frame with latitude and longitude columns. You can explicitly tell the marker function which columns contain the coordinate data (e.g. `addMarker(lng = ~Longitude, lat = ~Latitude)`), or let the function look for columns named `lat`/`latitude` and `lon`/`lng`/`long`/`longitude` (case insensitive).

Icon Markers

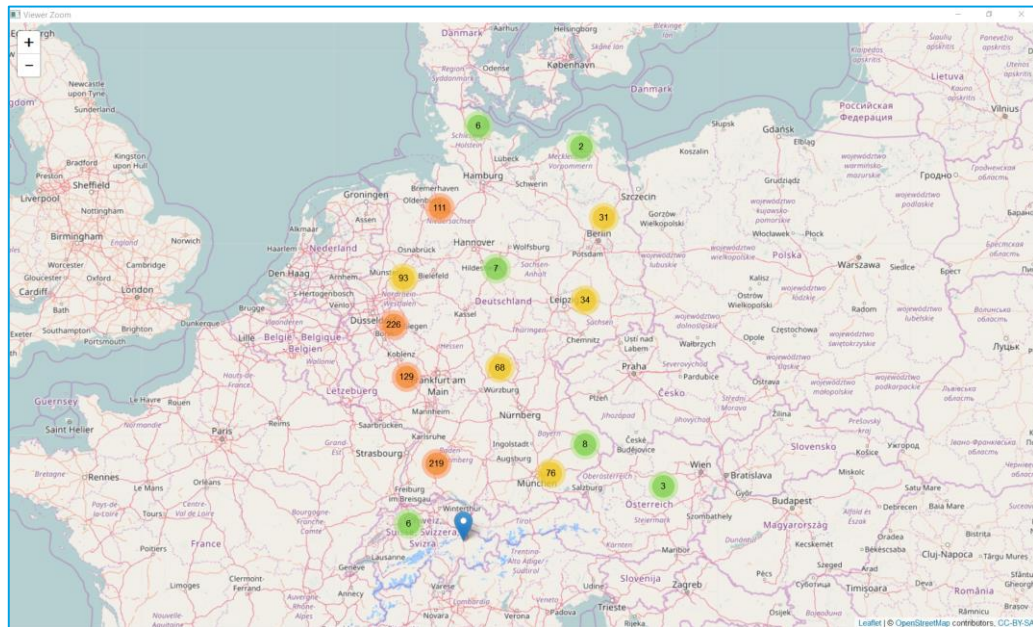
Icon markers are added using the `addMarker` function. Their default appearance is a dropped pin. As with most layer functions, the `popup` argument can be used to add a message to be displayed on click.

```
data(quakes)
```

```
# Show first 20 rows from the 'quakes' dataset
leaflet(data = quakes[1:20,]) %>% addTiles() %>%
  addMarkers(~long, ~lat, popup = ~as.character(mag))
```




```
> leaflet(df) %>%  
  addTiles() %>%  
  addMarkers(  
    clusterOptions = markerClusterOptions()  
  )
```



htmlwidgets for R [Home](#) [Showcase](#) [Develop](#) [Flexdashboard](#) [Crosstalk](#) [Gallery](#) [GitHub](#)

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Develop new widgets using a framework that seamlessly bridges R and JavaScript

Oregon Climate Station Data
Annual Temperature

At the R console In R Markdown docs In Shiny apps

Widgets in action

Just a line or two of R code can be used to create interactive visualizations. See the featured widgets in the [showcase](#) and browse over 50 available widgets in the [gallery](#).

[See the showcase](#)

Interactive dashboards

You can easily compose multiple htmlwidgets into a dashboard using the [flexdashboard](#) package, which features flexible and easy to specify row and column-based layouts for

[Create a dashboard](#)

Demo



Vielen Dank für Eure Aufmerksamkeit

Fragen?

→ Antworten

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