Alexander Kowarik
Qualitymanagement and
Methods
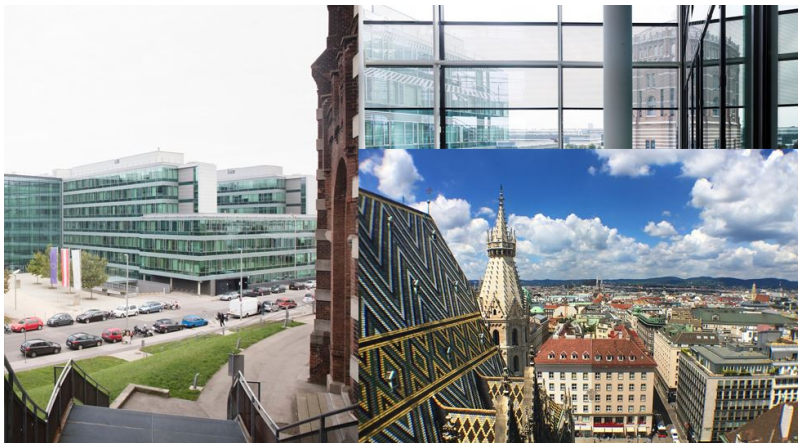
Toulouse
July 2019

uRos2020 - unconfUROS - voronoiTreemap
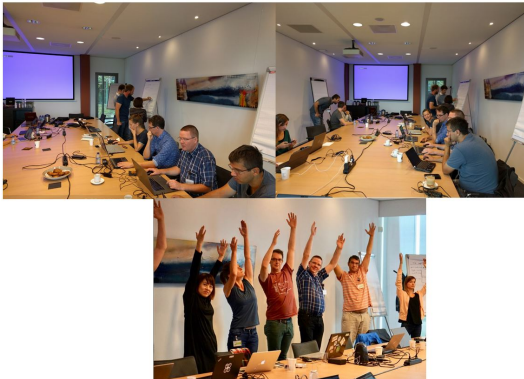
➢ https://urosconf.org / @urosconf
➢ Since 2013
➢ R community in Official Statistics
➢ about 100 participants

The Use of R in Official Statistics conference - uRos

➢ https://urosconf.org / @urosconf
➢ Next conference May 2020 in Vienna @ Statistics Austria

unconfUROS

➢ satellite event since
➢ 2018 in The Hague
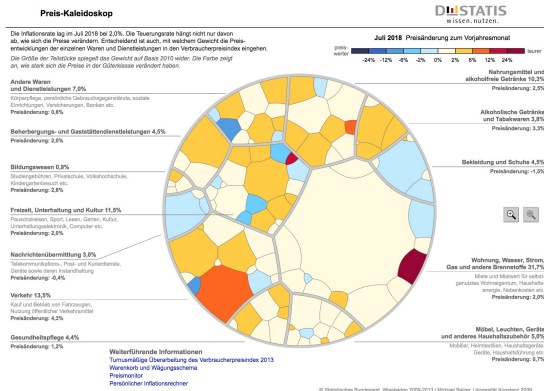➢ Second May 2019 in Bucharest

Collecting ideas

➢ Collected from participants (and other interested R users)
➢ Prototype should be doable in 1-2 days
➢ Need in the area of official statistics

Example ideas

➢ Shiny app for data validation
➢ Wrapper for the geocoding service Locatieserver
➢ A categorical variable that satisfies needs of NSIs
➢ Inventory of network measures

> Make it easy to create a plot like this with R
> Team together with Bernhard Meindl(Statistics Austria) and Manolo Malaver-Vojvodic (Statistics Canada)

➢ D3 plugin for Voronoi treemap available
https://github.com/Kcnarf/d3-voronoi-treemap
➢ R package htmlwidgets http://htmlwidgets.org/

R package

➢ CRAN version 0.2.0
➢ https://github.com/uRosConf/voronoiTreemap
➢ important functions:

  ➢ vt_input_from_df ... easy data input as a data frame
  ➢ vt_export_json ... export to json
  ➢ vt_d3 ... create an htmlwidget
  ➢ vt_app ... start a shiny to create a Voronoi treemap

```
data(ExampleGDP)
knitr::kable(head(ExampleGDP,3))
```

h1	h2	h3	color	weight	codes
Total	Asia	China	#f58321	14.84	CN
Total	Asia	Japan	#f58321	5.91	JP
Total	Asia	India	#f58321	2.83	IN

- ➢ CRAN version 0.2.0
- ➢ https://github.com/uRosConf/voronoiTreemap
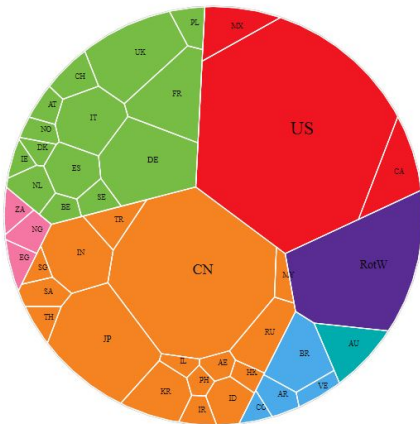- ➢ important functions:
    - ➢ vt_input_from_df ... easy data input as a data frame
    - ➢ vt_export_json ... export to json
    - ➢ vt_d3 ... create an htmlwidget
    - ➢ vt_app ... start a shiny to create a Voronoi treemap

```
data(ExampleGDP)
knitr::kable(head(ExampleGDP,3))
```

h1	h2	h3	color	weight	codes
Total	Asia	China	#f58321	14.84	CN
Total	Asia	Japan	#f58321	5.91	JP
Total	Asia	India	#f58321	2.83	IN

Create a first graph

```
gdp_json <- vt_export_json(vt_input_from_df(ExampleGDP))
vt_d3(gdp_json)
```

```
vt_d3(gdp_json,label = FALSE, color_border = "#000000",
      size_border = "2px", legend = TRUE)
```


Asia
North America
Europe
South America
Australia
Africa
Rest of the World
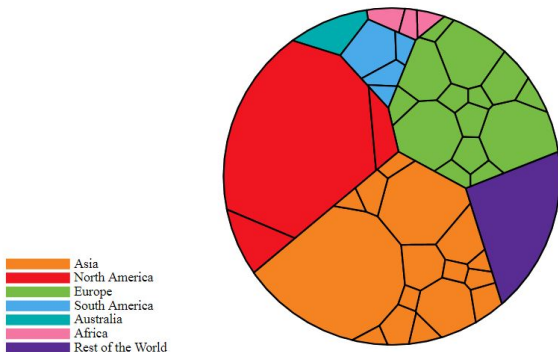
➢ You can set a seed (in JavaScript
   https://github.com/davidbau/seedrandom).

```
vt_d3(gdp_json, legend = TRUE, legend_title = "Continents", seed = 1)
```

A 2nd Example (Canadian Consumer Price Index) I
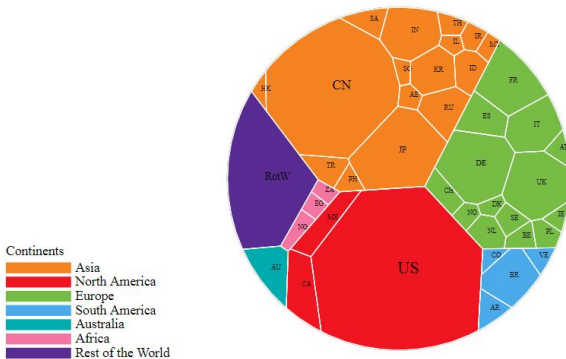
➢ Colors can be provided for each cell independently.

```
data(canada)
canada <- canada[canada$h1 == "Canada",]
canada$codes <- canada$h3
canadaH <- vt_export_json(vt_input_from_df(
  canada, scaleToPerc = FALSE))
vt_d3(canadaH, label=FALSE, width = 400, height = 400, legend = TRUE)
```


Food
Shelter
Household operations, furnishings and equipment
Clothing and footwear
Transportation
Health and personal care
Recreation, education and reading
Alcoholic beverages and tobacco products

➢ Colors could be computed according to a numeric variable, e.g. with the <u>scales</u> package.

```
canada$color <- scales::seq_gradient_pal(low = "#999999",
    high = "#ffffff")(canada$weight / max(canada$weight))
canadaH <- vt_export_json(vt_input_from_df(canada,
    scaleToPerc = FALSE))
vt_d3(canadaH, label=FALSE, width = 400, height = 400,
    color_border = "#000000")
```
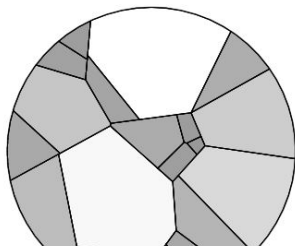
➢ You are invited to uRos2020 conference in Vienna
https://urosconf.org

➢ If you are interested in collaborative development in the area of official statistics, join unconfUROS2020
https://github.com/uRosConf/unconfUROS2020

➢ If you have an <u>ideas</u> to be implemented - tell us!