

# R Map

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## 基于百度地图的迁徙分析

REmap 是一个基于 Echarts2.0 <http://echarts.baidu.com> 的一个 R 包。主要的目的是为广大数据玩家提供一个简便的，可交互的地图数据可视化工具。目前托管在 github, <https://github.com/lchiffon/REmap>

### REmap 包的安装

```
library(devtools)
install_github('lchiffon/REmap')
```

```
## Skipping install of 'REmap' from a github remote, the SHA1 (7eabe6f7) has not changed
## Use 'force = TRUE' to force installation
```

REmap 目前更新到 V0.3, 提供百度迁徙, 分级统计, 百度地图, 热力图等功能的实现。

#### 特性

- 使用 Echarts2.0 封包, 地图绘制使用的是 SVG 图形
- 采用百度 API 来自动获取城市的经纬度数据
- 支持 Windows!

### 获取经纬度

获取经纬度的函数是基于 BaiduAPI 的一个获取地理位置的功能。这个函数不仅是 REmap 下的一个功能, 实际上, 你也可以用它来抓取城市经纬度数据:

#### 基本函数:

- get\_city\_coord 获取一个城市的经纬度
- get\_geo\_position 获取一个城市向量的经纬度

```
library(REmap)
city_vec = c("北京", "Shanghai", "广州")
get_city_coord("Shanghai")
```

```
## Warning in get_city_coord("Shanghai"): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

## [1] 121.48024 31.23631

get_geo_position (city_vec)

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

##           lon           lat           city
## 1  121.480237 31.236305 Shanghai
## 12 116.413554 39.911013 北京
## 21 113.270793 23.135308 广州
```

## 绘制迁徙地图

绘制地图使用的是主函数 `remap`

```
remap(mapdata, title = "", subtitle = "", theme = get_theme("Dark"))
```

- `mapdata` 一个数据框对象，第一列为出发地点，第二列为到达地点
- `title` 标题
- `subtitle` 副标题
- `theme` 控制生成地图的颜色，具体将会在 `get_theme` 部分说明

```
set.seed(125)
origin = rep("北京", 10)
destination = c('上海', '广州', '大连', '南宁', '南昌',
                '拉萨', '长春', '包头', '重庆', '常州')
dat = data.frame(origin, destination)
out = remapB(dat, title = "REmap 实例数据", subtitle = "theme:Dark")
plot(out)
```

## Save img as: C:\Users\Jplee\AppData\Local\Temp\Rtmpy2nPSf\ID\_20170328092816\_484.html

该地图会写成一个 `html` 文件, 保存在电脑里面, 并通过浏览器打开该文件. 以下的方式都可以看到这个地图

```
## Method 1
remap(dat, title = "REmap 实例数据", subtitle = "theme:Dark")

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

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## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com
```



```

## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

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## http://lbsyun.baidu.com

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

out

## Save img as: C:\Users\Jplee\AppData\Local\Temp\Rtmpy2nPSf\ID_20170328092818_650.html
## Method 3
plot(out)

## Save img as: C:\Users\Jplee\AppData\Local\Temp\Rtmpy2nPSf\ID_20170328092818_650.html
p = remapB(markLineData = demoC)

## Warning in get_city_coord(out_list[i], ...): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com
p

## Save img as: C:\Users\Jplee\AppData\Local\Temp\Rtmpy2nPSf\ID_20170328092818_685.html

```

## 百度地图包的使用

```

install_github('badbye/baidumap')

## Skipping install of 'baidumap' from a github remote, the SHA1 (78379550) has not changed
## Use 'force = TRUE' to force installation

library(baidumap)
## 获取数据
barbeque = getPlace(' 烧烤', ' 深圳')

## Get 400 records, 20 page.
## Getting 0 th page
## Getting 1 th page
## Getting 2 th page

```

```
##      Getting 3 th page
##      Getting 4 th page
##      Getting 5 th page
##      Getting 6 th page
##      Getting 7 th page
##      Getting 8 th page
##      Getting 9 th page
##      Getting 10 th page
##      Getting 11 th page
##      Getting 12 th page
##      Getting 13 th page
##      Getting 14 th page
##      Getting 15 th page
##      Getting 16 th page
##      Getting 17 th page
##      Getting 18 th page
## Done!
```

```
## 准备数据
barbeque$tooltip = paste(barbeque$name,
                          barbeque$address,
                          barbeque$telephone, sep = "<br/>")
geodata = data.frame(barbeque$lon,
                      barbeque$lat,
                      barbeque$name)

## 绘制数据
remapB(center = get_city_coord(" 深圳职业技术学院东校区"),
        zoom = 15,
        markPointData = barbeque,
        geoData = geodata,
        markPointTheme = markPointControl(effect = F, symbol = "pin",
                                             symbolSize = 7,
                                             color="red"),

        title=" 深圳烧烤分布")
```

```
## Warning in get_city_coord("深圳职业技术学院东校区"): Please use your own baidu API!
## Set it using: options(remap.ak = "XXXXXX")
## http://lbsyun.baidu.com

## Save img as: C:\Users\Jplee\AppData\Local\Temp\Rtmpy2nPSf\ID_20170328092850_3876.html
```

```
## 获取线路
library(baidumap)
df = getRoute(' 深圳大学-北门', ' 深圳职业技术学院东区', region=" 深圳")
## 准备数据
df$label = paste("Point", 1:dim(df)[1])
markLinedata = data.frame(origin = df$label[-dim(df)[1]],
                          destination = df$label[-1])

## 绘制地图
remapB(center = get_city_coord(" 深圳"),
        zoom = 13,
        markLineData = markLinedata, geoData = df,
        markLineTheme = markLineControl(smoothness = 0,
                                           effect = T,
                                           symbolSize = c(0,0)))
```

```
## Warning in get_city_coord("深圳"): Please use your own baidu API!  
## Set it using: options(remap.ak = "XXXXXX")  
## http://lbsyun.baidu.com  
## Save img as: C:\Users\Jplee\AppData\Local\Temp\Rtmpy2nPSf\ID_20170328092851_3964.html
```