



# TileMill

*Rendu cartographique personnalisé avec CartoCSS*

# Qu'est-ce que TileMill ?

- Un éditeur interactif de feuilles de style CartoCSS pour Mapnik
- Une interface graphique
- Un générateur de tuiles intégré
- disponible pour Linux, Windows, OSX et sous licence BSD

# L'interface de TileMill

The screenshot shows the TileMill interface with a map of Washington D.C. on the left. The map features a dense network of streets, including major avenues like Constitution Ave NW, Independence Ave SW, and New York Ave NW. A legend on the bottom right defines road types: Motorways (red), Main roads (yellow), Other roads (grey), Bike paths (purple dashed), Foot paths (green dashed), Forest (green), and Water (blue). A sidebar on the left contains icons for Editor, Projects, Manual, Plugins, and Settings. A zoom control at the top left shows 'ZOOM 13'. The title 'Rendu généré' is overlaid on the map.

## Open Streets, DC

Editor   Save   Export   ⚙

style.mss   highway.mss   labels.mss   +

```
1 ****
2 Open Streets, DC
3 ****
4 ****
5 *An example of street-level map design.*
6
7 Data used by this map is © OpenStreetMap contributors,
8 CC-BY-SA. See <http://openstreetmap.org> for more info.
9
10 This map makes use of OpenStreetMap shapefile extracts
11 provided by CloudMade at <http://downloads.cloudmade.com>.
12 You can swap out the DC data with any other shapefiles
13 provided by CloudMade to get a map of your area.
14
15 To prepare a CloudMade shapefiles zip package for TileMill,
16 download it and run the following commands:
17
18     unzip your_area.shapefiles.zip
19     cd your_area.shapefiles
20     shapeindex *.shp
21     for i in *.shp; do \
22         zip `basename $i .shp` `basename $i shp`;;
23     done
24
25 ****
26 /* ---- PALETTE ---- */
27
28 @water:#c0d8ff;
29 @forest:#cea;
30 @land:#fff;
31
32 Map {
33     background-color:@land;
34 }
35
36
37 .natural[TYPE='water'],
38 .water {
39     polygon-fill:@water;
40 }
```

Color palette:

- Water: #c0d8ff
- Forest: #cea
- Land: #fff

# CartoCSS en quelques mots

- Des feuilles de styles façon "CSS" (Cascading StyleSheet)
- Lisibilité et maintenance améliorées
- Syntaxe proche des CSS utilisées par le W3C

# Avant CartoCSS... (XML)

```
<Rule>
<MaxScaleDenominator>100000</MaxScaleDenominator>
<Filter>([feature] = 'tourism_picnic_site')</Filter>
<PolygonSymbolizer fill="#ccff99" fill-opacity="0.5" />
<LineSymbolizer stroke="#666666" stroke-width="0.3" />
</Rule>
<Rule>
<MaxScaleDenominator>100000</MaxScaleDenominator>
<Filter>([feature] = 'tourism_camp_site')</Filter>
<PolygonSymbolizer fill="#ccff99" fill-opacity="0.5" />
<LineSymbolizer stroke="#666666" stroke-width="0.3" />
</Rule>
<Rule>
<MaxScaleDenominator>100000</MaxScaleDenominator>
<Filter>([feature] = 'tourism_caravan_site')</Filter>
<PolygonSymbolizer fill="#ccff99" fill-opacity="0.5" />
<LineSymbolizer stroke="#666666" stroke-width="0.3" />
</Rule>
```

# Avec CartoCSS...

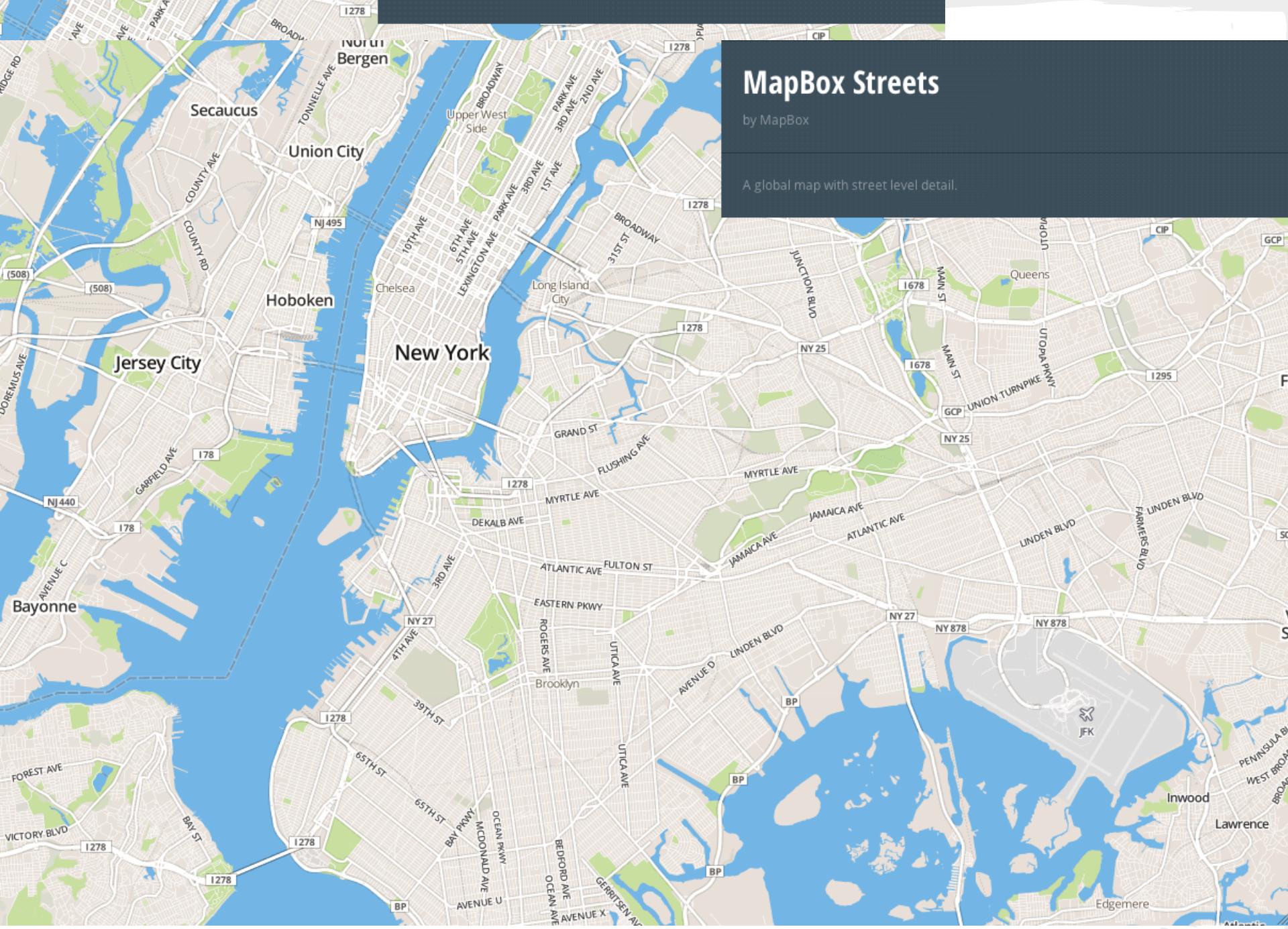
```
[feature = 'tourism_camp_site'],
[feature = 'tourism_caravan_site'],
[feature = 'tourism_picnic_site'] {
  [zoom >= 13] {
    polygon-fill: #ccff99;
    polygon-opacity: 0.5;
    line-color: #666;
    line-width: 0.3;
  }
}
```

# Le duo TileMill / Mapnik

TileMill s'appuie sur Mapnik:

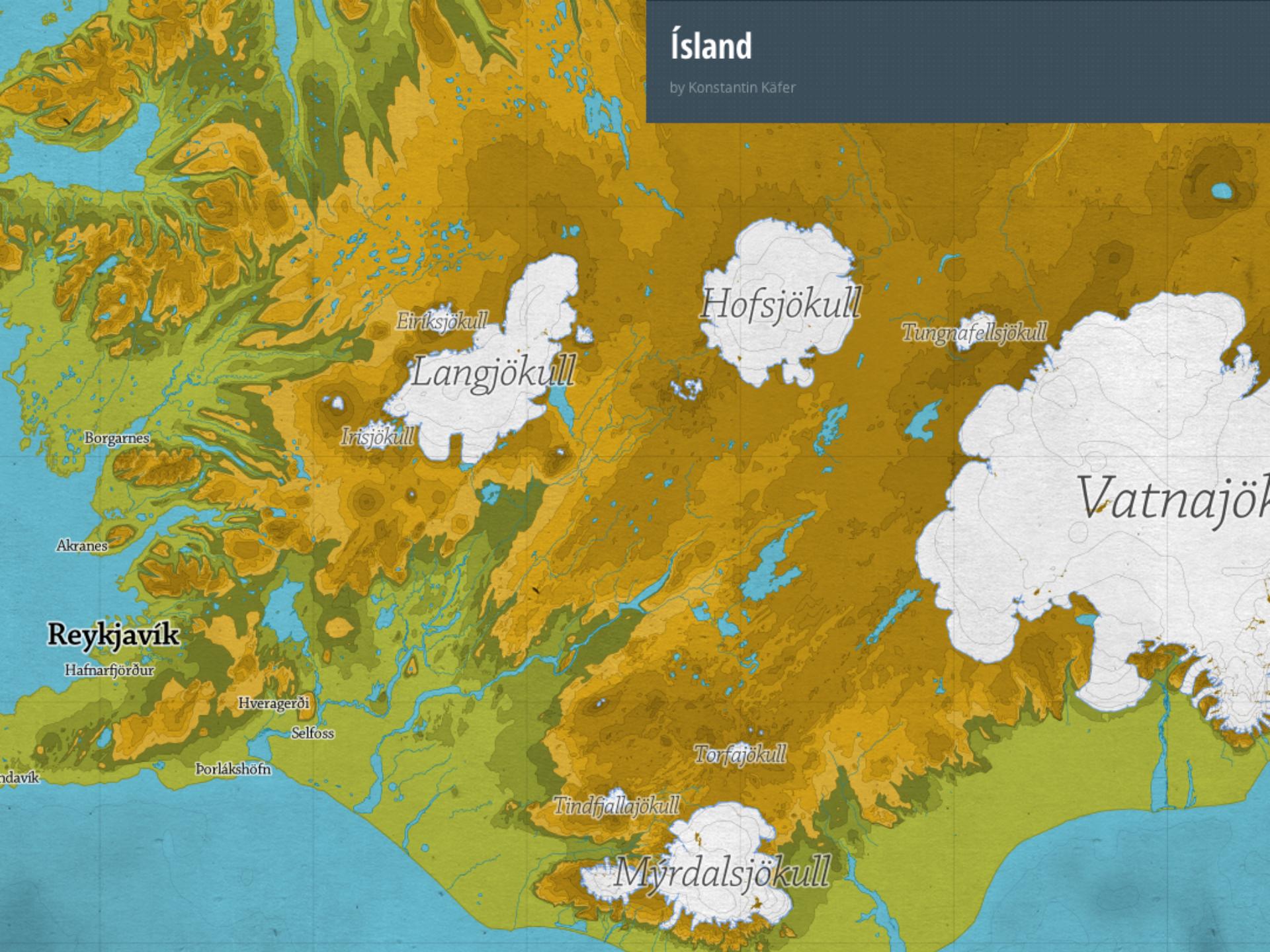
- nombreuses sources de données possibles
  - base de données: PostGIS, SQLite
  - fichiers: SHP, CSV, GeoJSON, KML
  - raster: geotiff
- anti-aliasing de qualité (AGG)
- rendu vectoriel en SVG, PDF ou bitmap (PNG, JPEG, MbTiles)

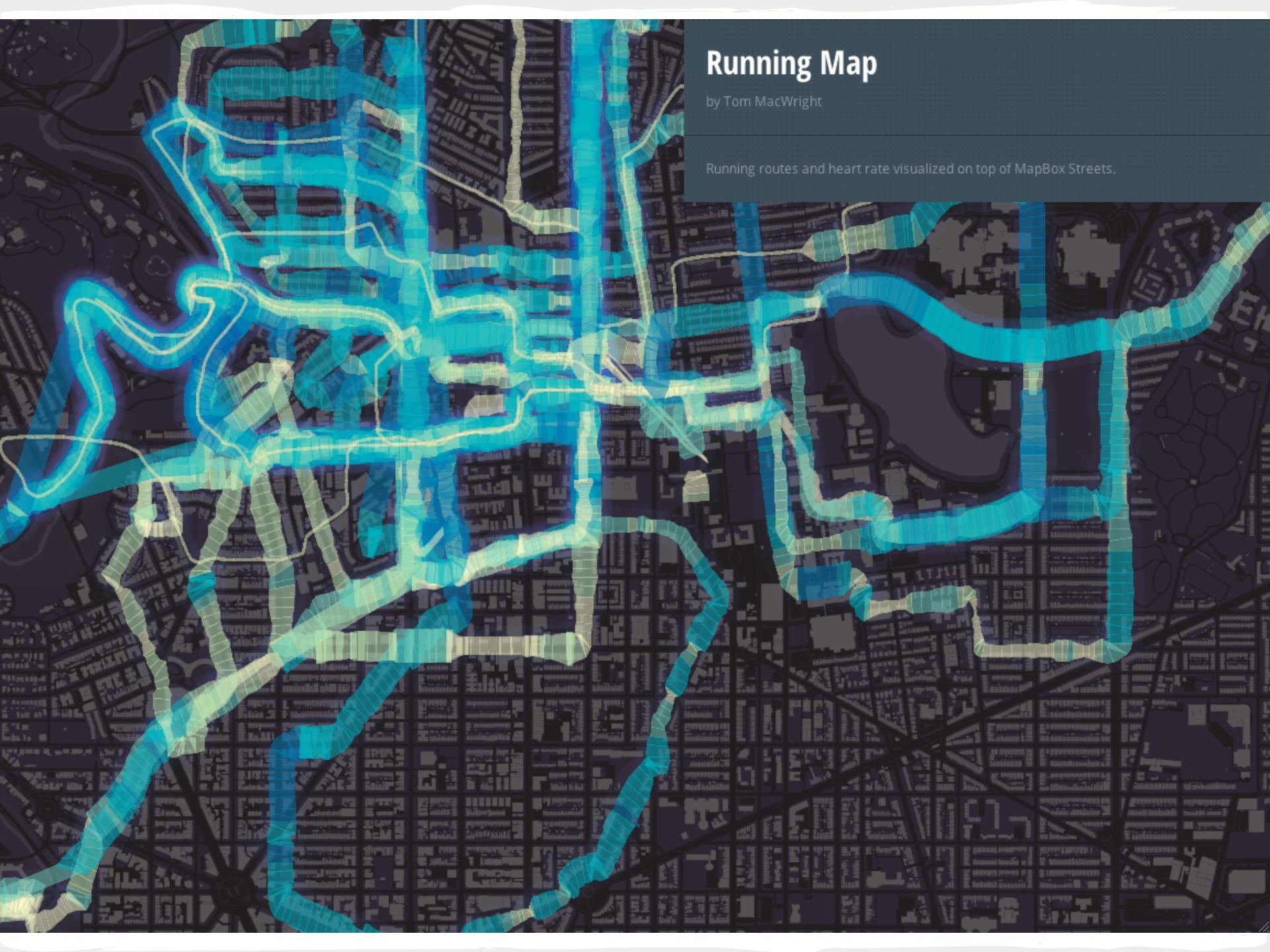
# Quelques exemples...



# Ísland

by Konstantin Käfer



The background of the image is a detailed satellite-style map of a city, showing streets, buildings, and green spaces. Superimposed on this map are numerous running routes, depicted as thick, translucent blue lines. These routes form a complex web, with some paths being more prominent than others, suggesting frequency or duration. The overall effect is a visual representation of a runner's activity patterns across an urban environment.

# Running Map

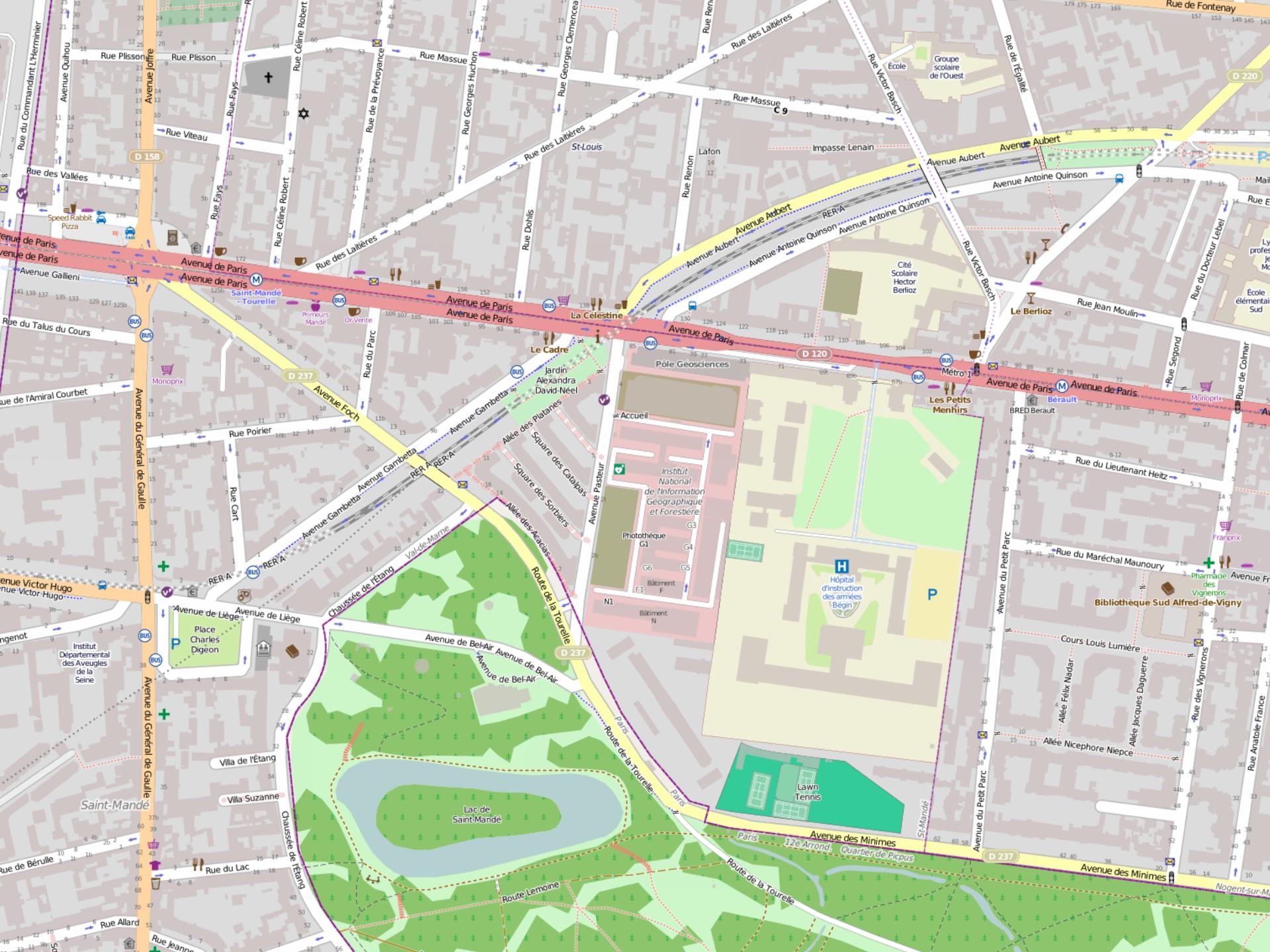
by Tom MacWright

Running routes and heart rate visualized on top of MapBox Streets.

# Pirate Map

by AJ Ashton







Démo !

# Exemple: rendu "OSM-FR"

Cahier des charges :

- améliorer ce rendu :
  - l'adapter à la culture et aux usages hexagonaux
  - mieux hiérarchiser les informations
  - offrir de nouveaux niveaux de zoom
  - rendre visible certaines informations manquantes
- conserver le "look and feel" du rendu OSM car celui-ci est connu et reconnu

# "openstreetmap-cartocss"

- portage en CartoCSS de la feuille de style XML réalisé par Andy Alan

[github.com/gravitystorm/openstreetmap-cartocss](https://github.com/gravitystorm/openstreetmap-cartocss)

- fork de cette feuille de style

[github.com/cquest/osmfr-cartocss](https://github.com/cquest/osmfr-cartocss)

# PostGIS + TileMill

Le rendu des passages piéton :

- Calcul de l'orientation par PostGIS

Le rendu des terrains de sport :

- Calcul de l'orientation et des dimensions par PostGIS

# Exemple des passages piéton

## Calcul de l'orientation : angle et angle\_diff

```
(select osm_id, ST_GeometryN(st_union(way),1) as way, max(angle)-min(angle) as
angle_diff, avg(angle) as angle from
(select p.osm_id, p.way as way, cast(90+degrees(ST_Azimuth
(st_line_interpolate_point(ST_Intersection(st_buffer(p.way,0.1), h.way),0),
st_line_interpolate_point(ST_Intersection(st_buffer(p.way,0.1), h.way),1))) as
integer) % 180 as angle
from planet_osm_point p join planet_osm_line h on (st_intersects(p.way,h.way)
and h.highway is not null and h.highway not in
('footway','cycleway','path','pedestrian','steps','service'))
where (p.highway='crossing' or p.tags->'crossing' in
('traffic_signals','uncontrolled')) and p.way && !bbox!) as crossing group by
osm_id )
as highway_crossings
```

# Exemple des passages piéton

Et feuille de style CartoCSS :

```
#highway_crossings {  
  [zoom>=19][angle_diff<30]  
  {  
    point-file: url('symbols/fr/crossing2.png');  
    point-transform: 'rotate([angle])';  
  }  
  [zoom>=19][angle_diff>=30]  
  {  
    point-file: url('symbols/fr/crossing.png');  
  }  
}
```

# Visite guidée...

A voir sur...

<http://u.osmfr.org/m/4/>

et aussi sur

<http://tile.openstreetmap.fr>

# Merci à...

**MapBox**  
pour avoir conçu TileMill  
[mapbox.com/tilemill](http://mapbox.com/tilemill)

**Mapnik**  
pour la qualité du rendu possible  
[mapnik.org](http://mapnik.org)

**OpenStreetMap**  
pour les données libres !  
[osm.org](http://osm.org) / [osmfr.org](http://osmfr.org)