

Pokročilá vizualizace – knihovna WebGLayer

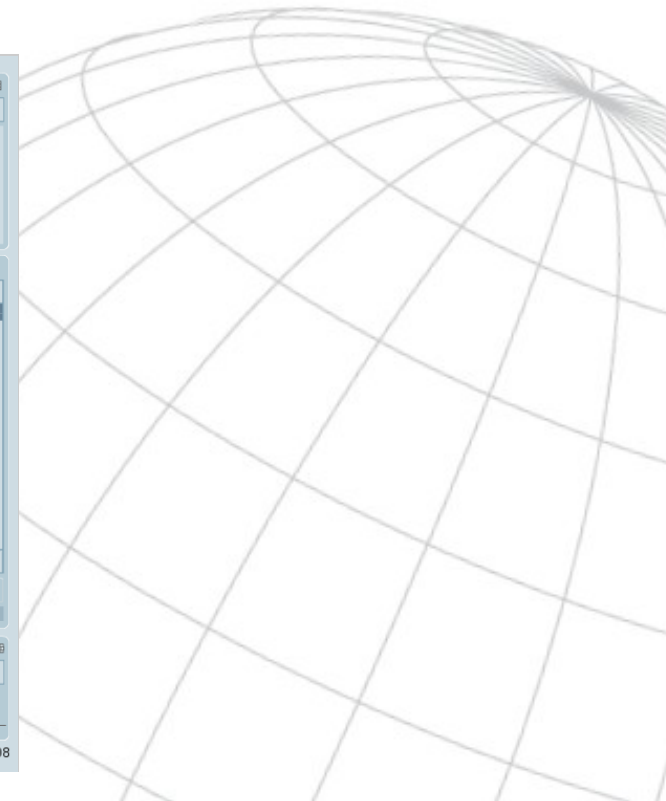
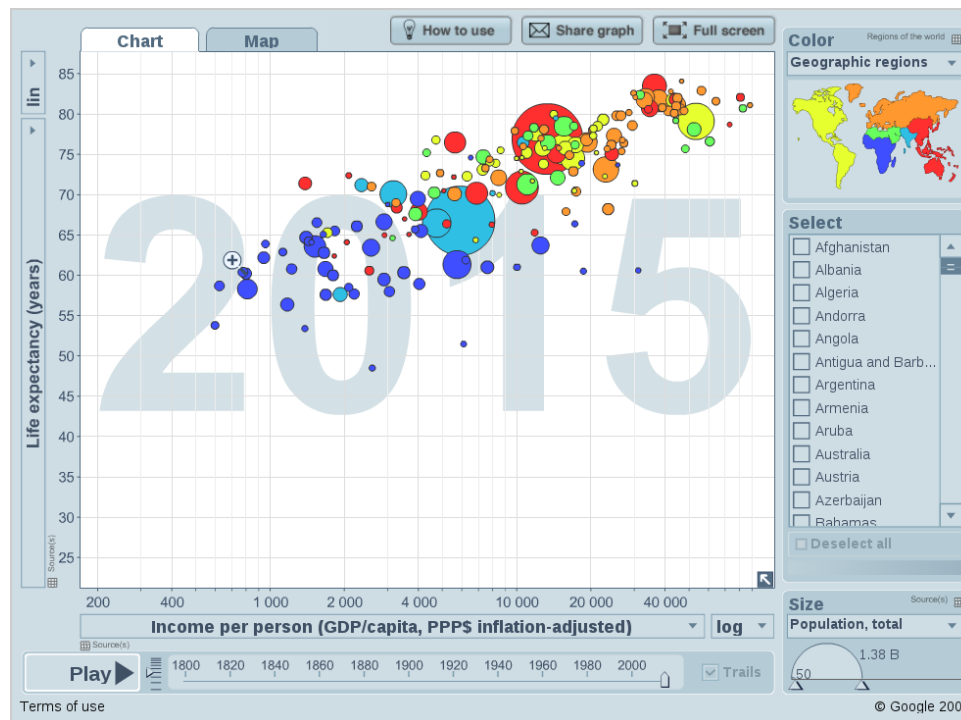
Jan Ježek, jezekjan@kma.zcu.cz

Západočeská univerzita,
oddělení geomatiky,
www.gis.zcu.cz

Vizualizace informací

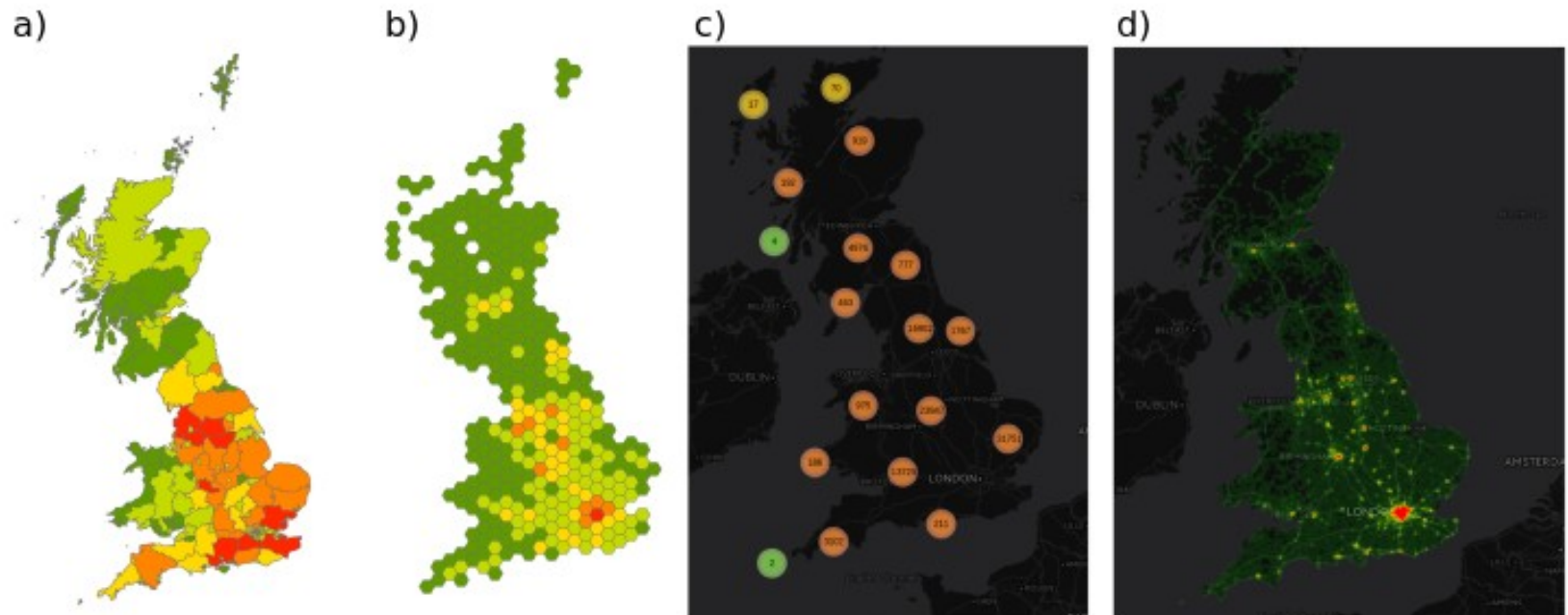
„The purpose of visualization is insight,
not picture“

-Shneiderman 1994



Geovizualizace

- Velká data
- Multidimenzionální data (prostor / čas / atributy)
- Interaktivita (Ben Shneiderman's Information Seeking Mantra: „Overview first, zoom and filter, details-on-demand“)
- Agregace



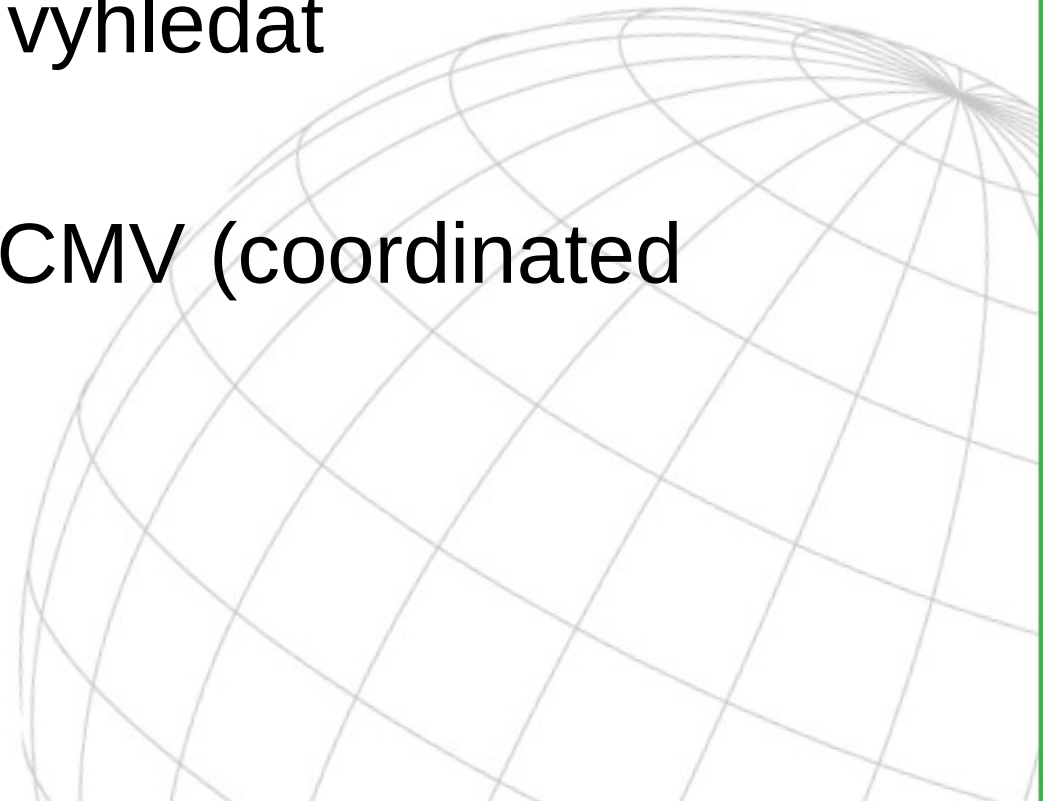
WebGLayer

- Javascript knihovna pro vizualizace velkých dat ve webovém prohlížeči pomocí WebGL
- Podpora Geovizualizace

 HS-RS Fraunhofer
IGD SDI4Apps Open
Transport Net

WebGLayer - vizualizace

- Co?
 - Data ve formě tabulky, prostorová data
- Proč?
 - Prezentovat, objevit, vyhledat
- Jak?
 - Agregovat, Filtrovat, CMV (coordinated multiple views)

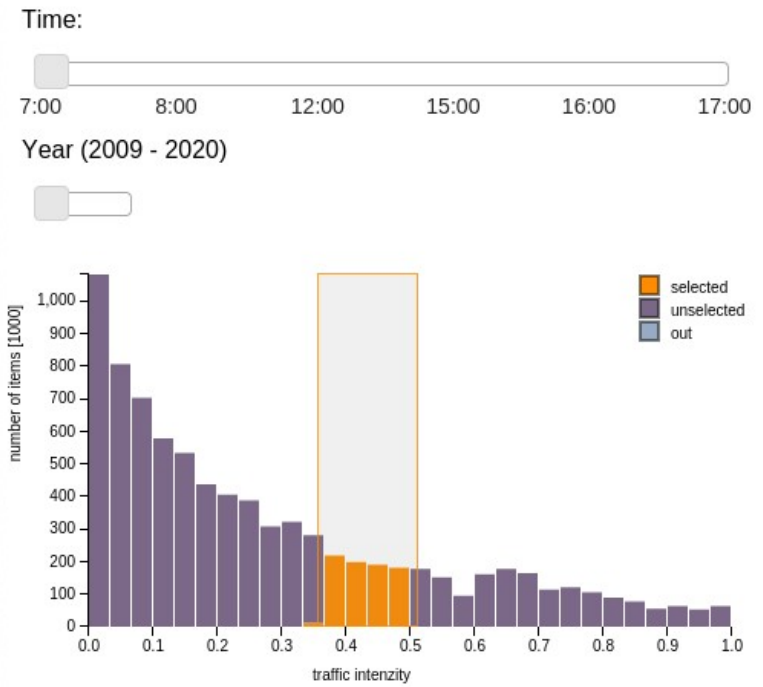
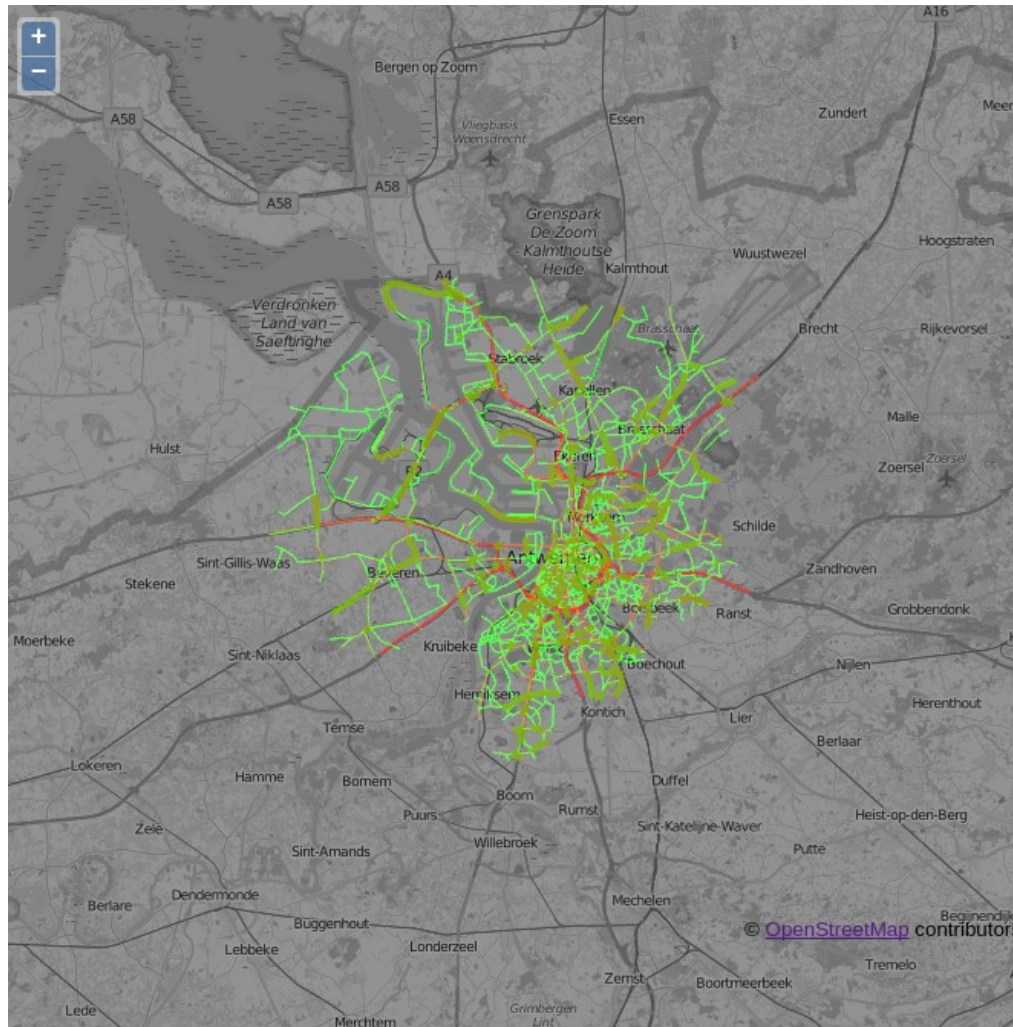


Ukázky

- Vizualizace intenzity dopravy
- Vizualizace dopravních nehod v UK
- SPOI

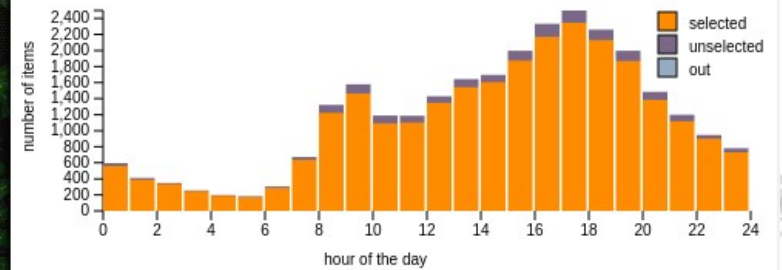
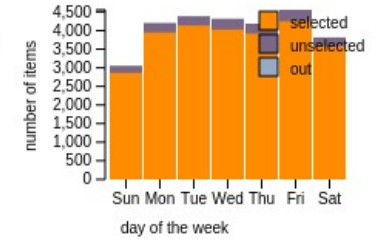
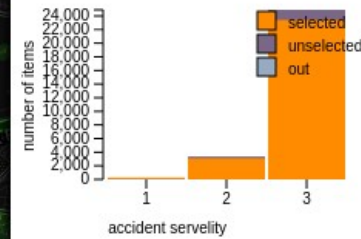
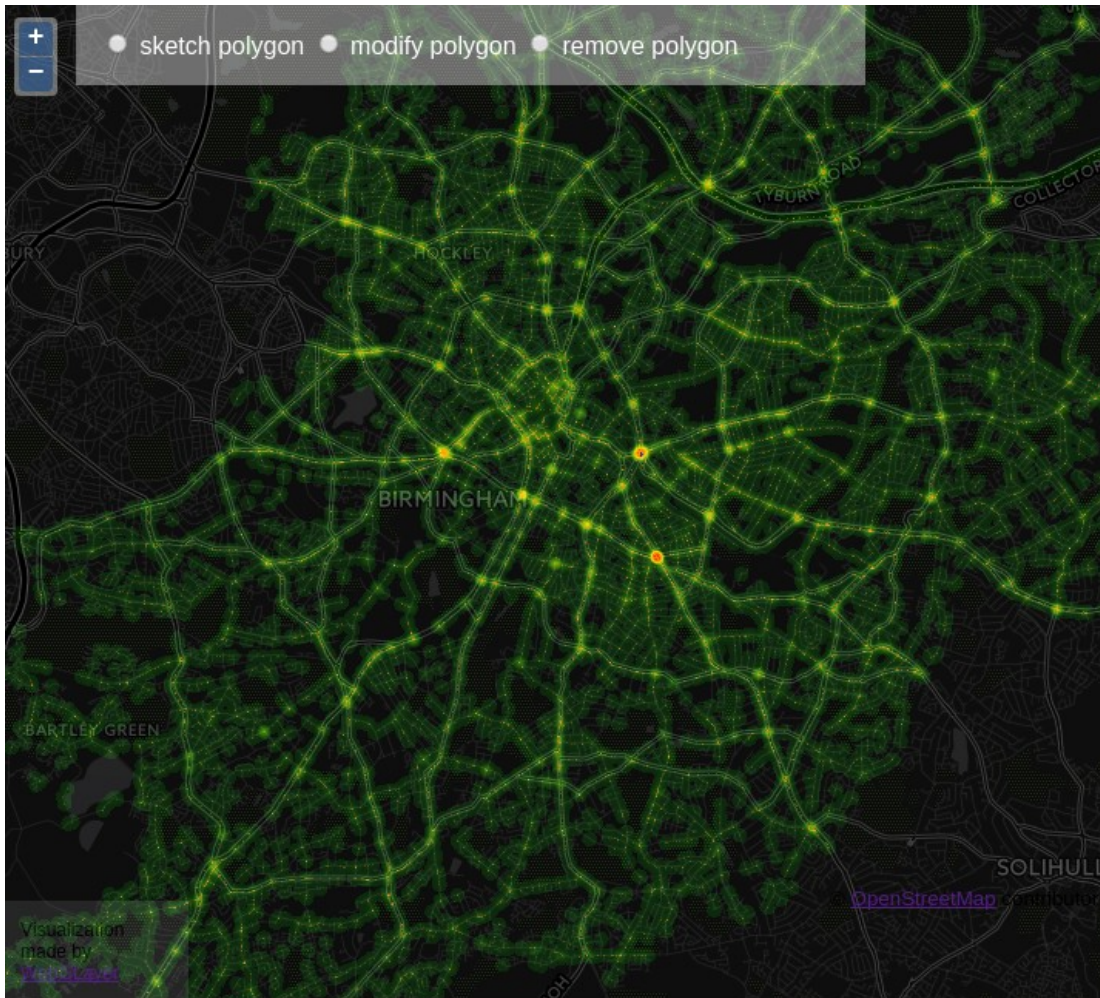


Vizualizace - intezita dopravy

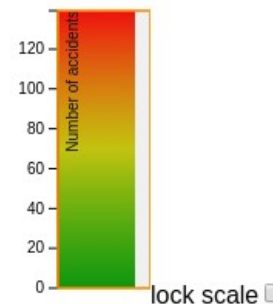


<http://home.zcu.cz/~jezekjan/otn/>

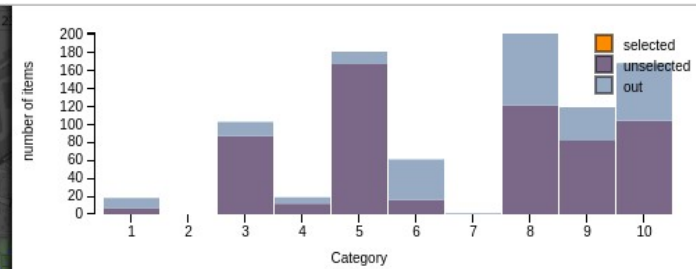
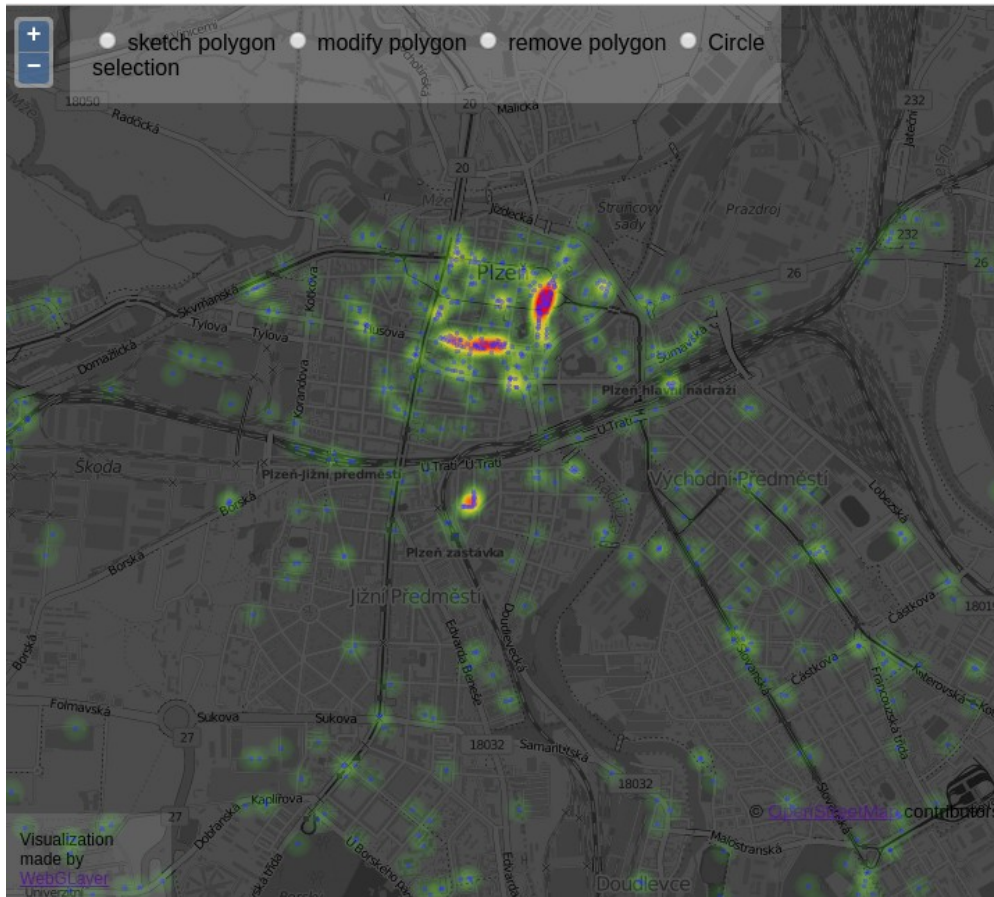
Dopravní nehody v Birminghamu



Radius:



Smart Point of Interest



- 1 - Car Services
- 2 - Culture & Entertainment
- 3 - Food and Drink
- 4 - Lodging
- 5 - Natural Features
- 6 - Other
- 7 - Outdoors
- 8 - Professional and Public
- 9 - Shopping and Services
- 10 - Transportation

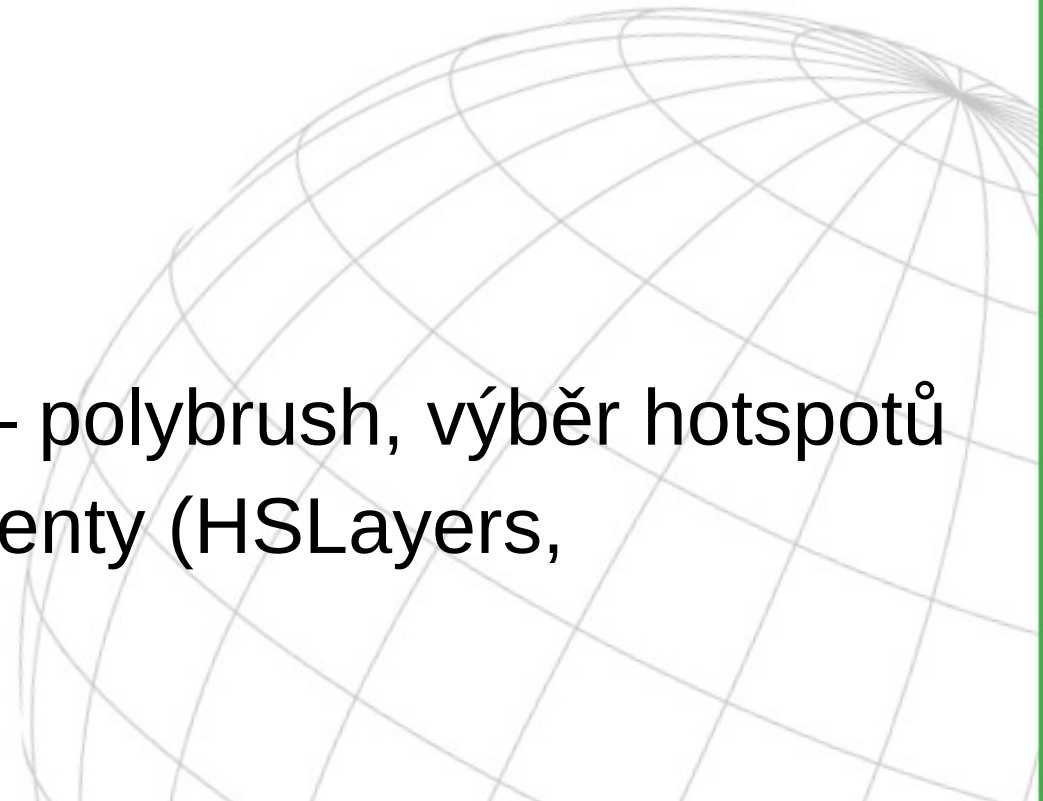
Radius:



<http://home.zcu.cz/~kellar/spoi/index.html>

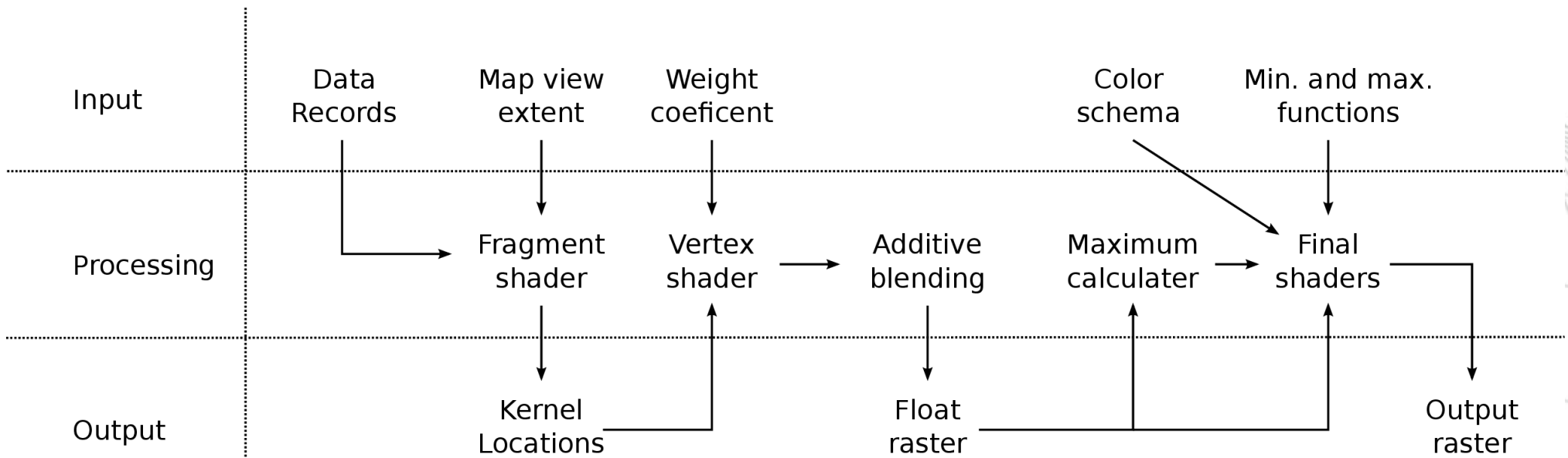
WebGLayer - vlastnosti

- Vizualizace až 1.5 mil záznamů
- Doba odezvy pod 100 ms
 - Bodová mapa
 - Heat mapa
 - Histogram
 - Parallel coordinates
 - Filtrování
 - Pokorčilá interaktivita – polybrush, výběr hotspotů
- Integrace s mapovými klienty (HSLayers, GoogleMaps, Leaflet...)

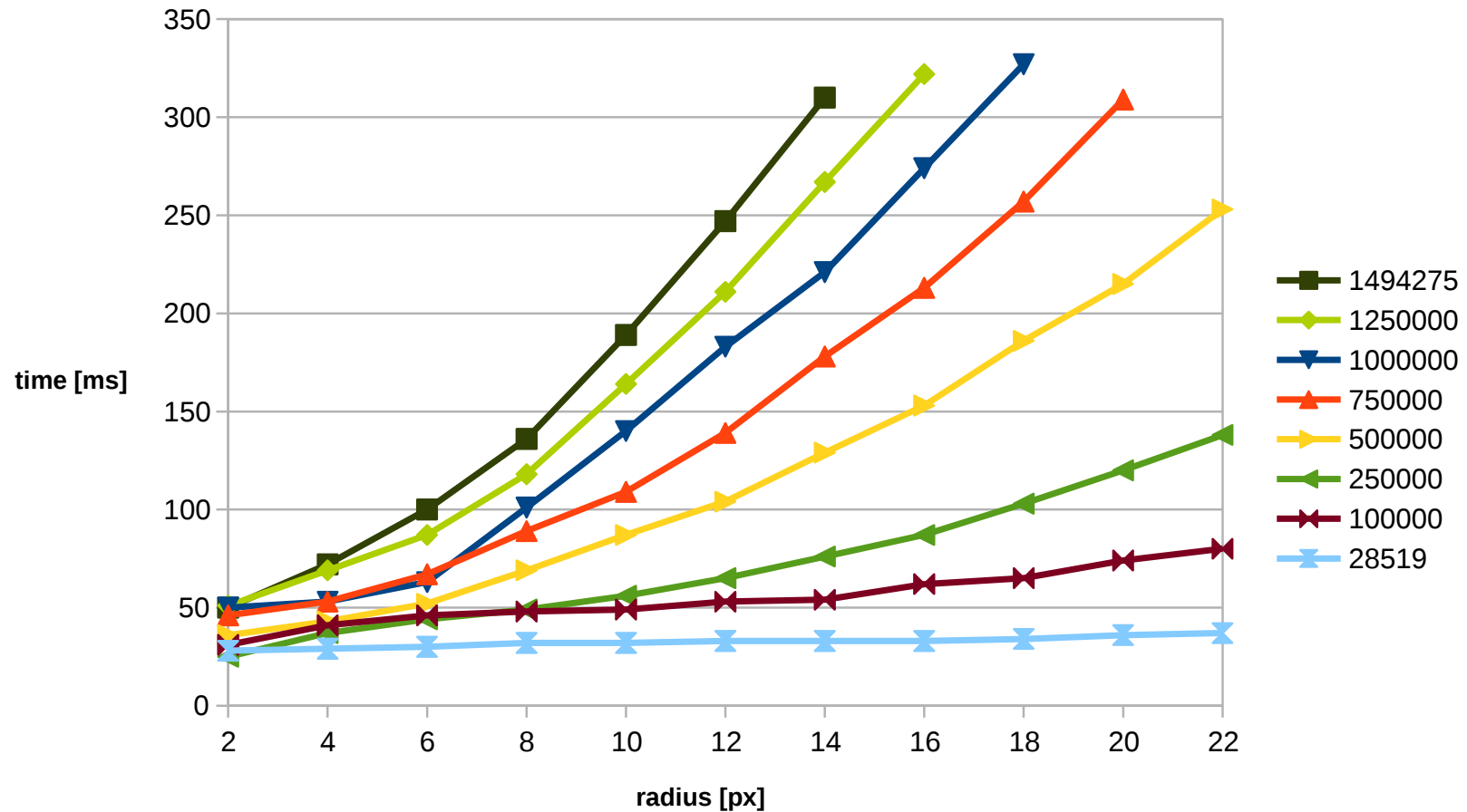


WebGLayer - vlastnosti

- Rendering pipeline (GPU)

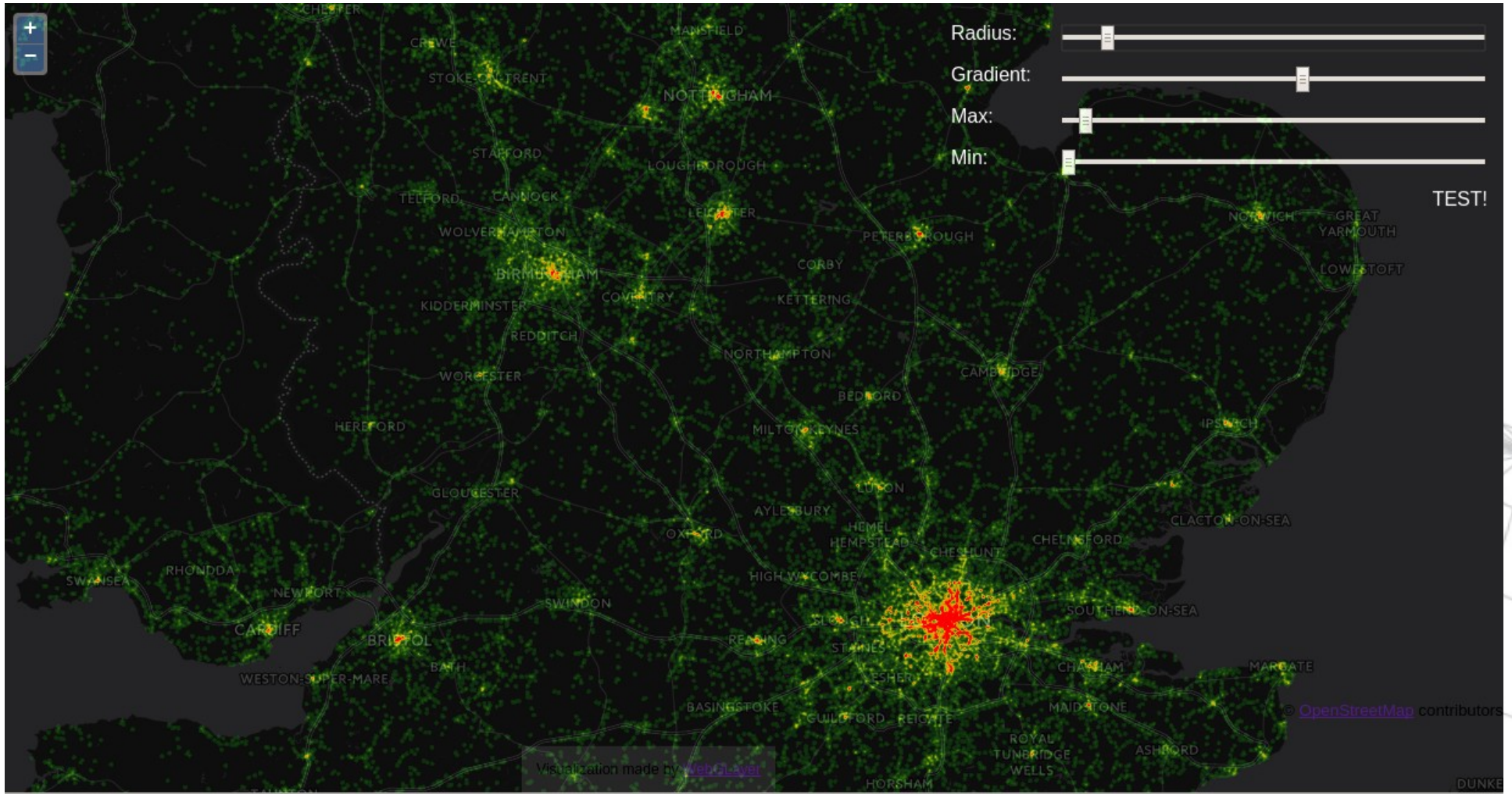


WebGLayer – HeatMap



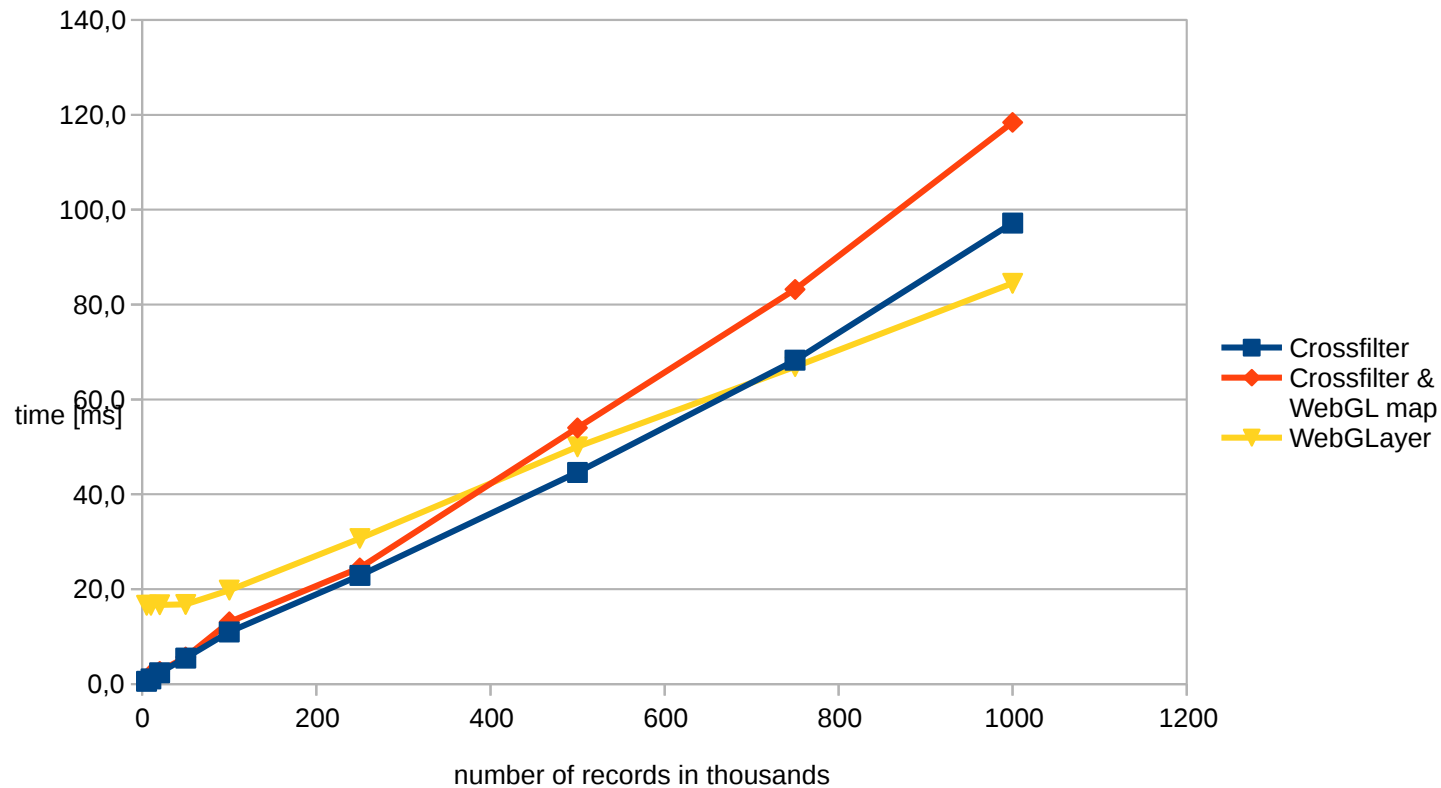
http://home.zcu.cz/~jezekjan/webglayer_git/examples/heatmap/

WebGLayer – HeatMap



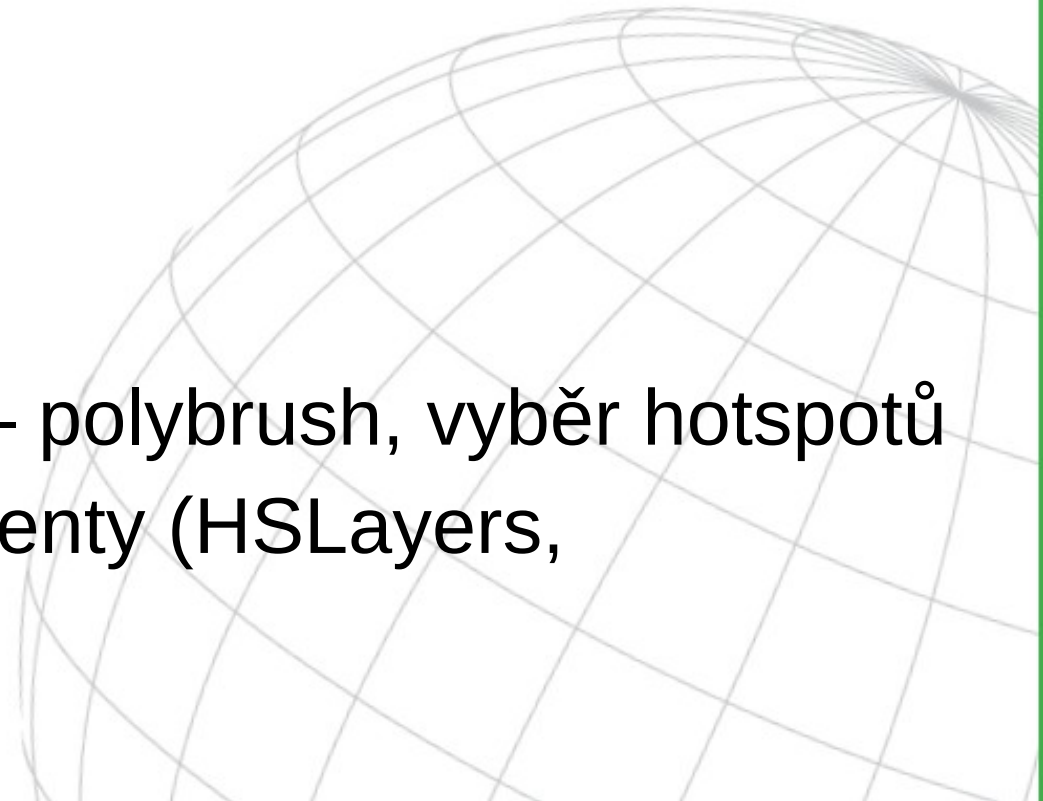
http://home.zcu.cz/~jezekjan/webglayer_git/examples/heatmap/

Filtrování- WebGLayer vs Crossfilter



WebGLayer - vlastnosti

- Vizualizace až 1.5 mil záznamů (využití GPU)
- Doba odezvy pod 100 ms
 - Bodová mapa
 - Heat mapa
 - Histogram
 - Parallel coordinates
 - Filtrování
 - Pokročilá interaktivita – polybrush, výběr hotspotů
- Integrace s mapovými klienty (HSLayers, GoogleMaps, Leaflet...)



WebGLayer

- Open Source (BSD) - GitHub
- Verze 1.0.1
- Javascript API

WebGLayer

[View the Project on GitHub](#)
jezekjan/webglayer

Download
ZIP File

Download
TAR Ball

View On
GitHub

Introduction

WebGLayer is JavaScript, WebGL based library for coordinated multiple views visualization. The library is focused on spatial data and large datasets (up to hundreds of thousands of features).

Documentation

The documentation and tutorials are available on project [wiki](#)

Examples

WebGLayer v1.0.1 example of cca 60 000 [Birmingham car accidents](#).



Děkuji za pozornost!

<http://jezekjan.github.io/webglayer/>

