OSM2World
3D OSM in your browser

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State of the Map 2019

OSM2World

- Open-source software
- Creates 3D models from OSM data ...
  - OSM files (XML, OSM.PBF, …)
  - Overpass API
- … and optionally elevation data, e.g. SRTM

3D models from OSM

1. Store/query/parse OSM data
2. Understand data and build 3D models
3. Export in desired format

3D models from OSM

2. Understand data and build 3D models

- Quite a bit of work
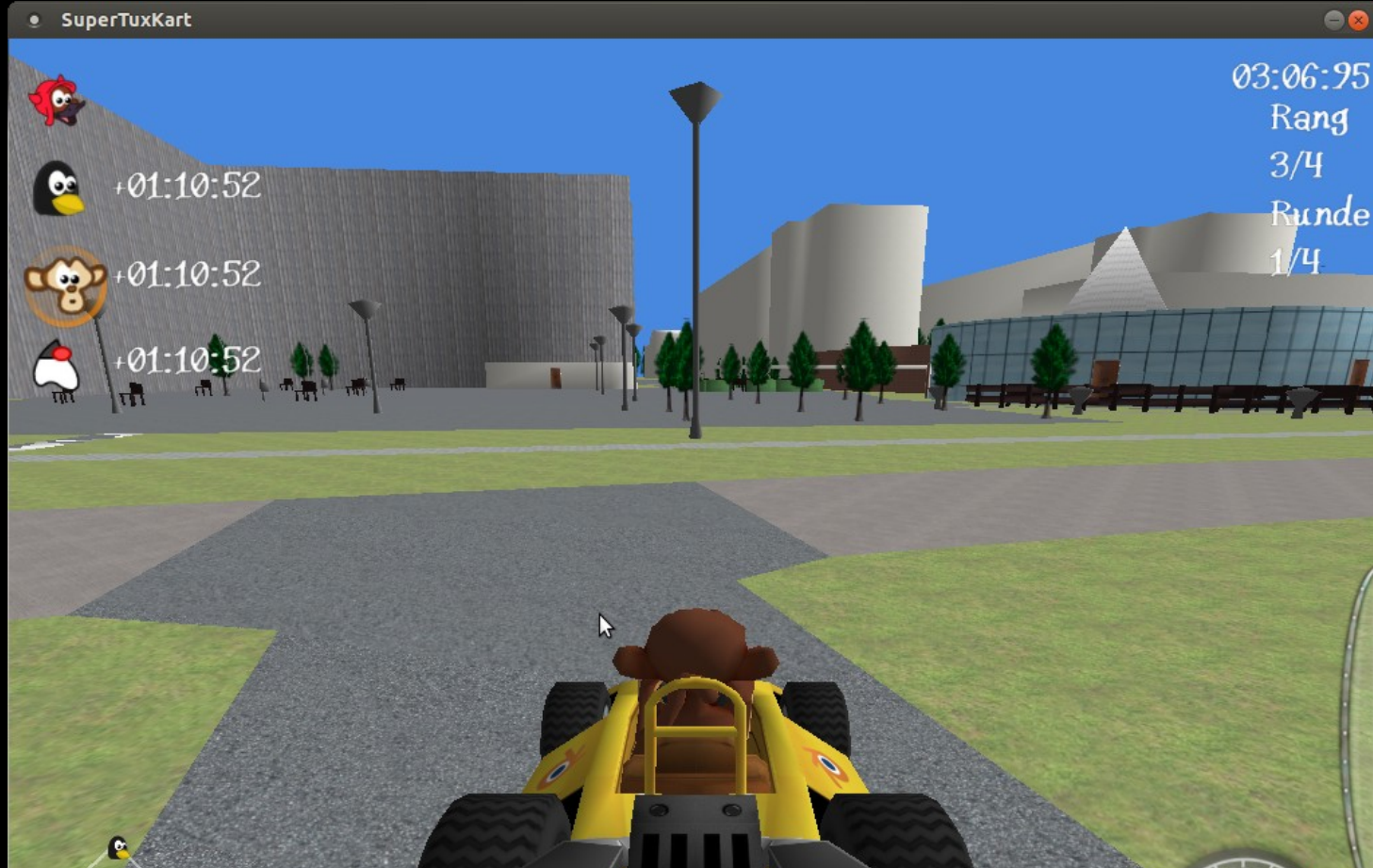- Mostly the same for many different use cases!

Current output formats

- 3D model export (.obj, .pov)
- Interactive rendering with OpenGL
- Still PNG images, including 2D map tiles

Video art with Blender
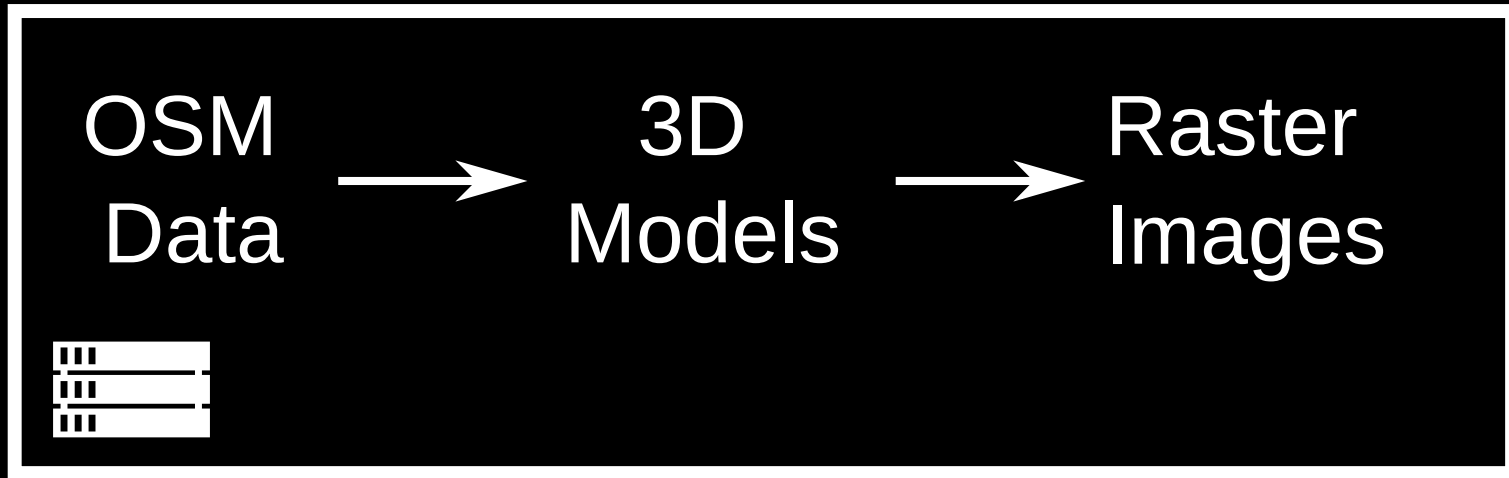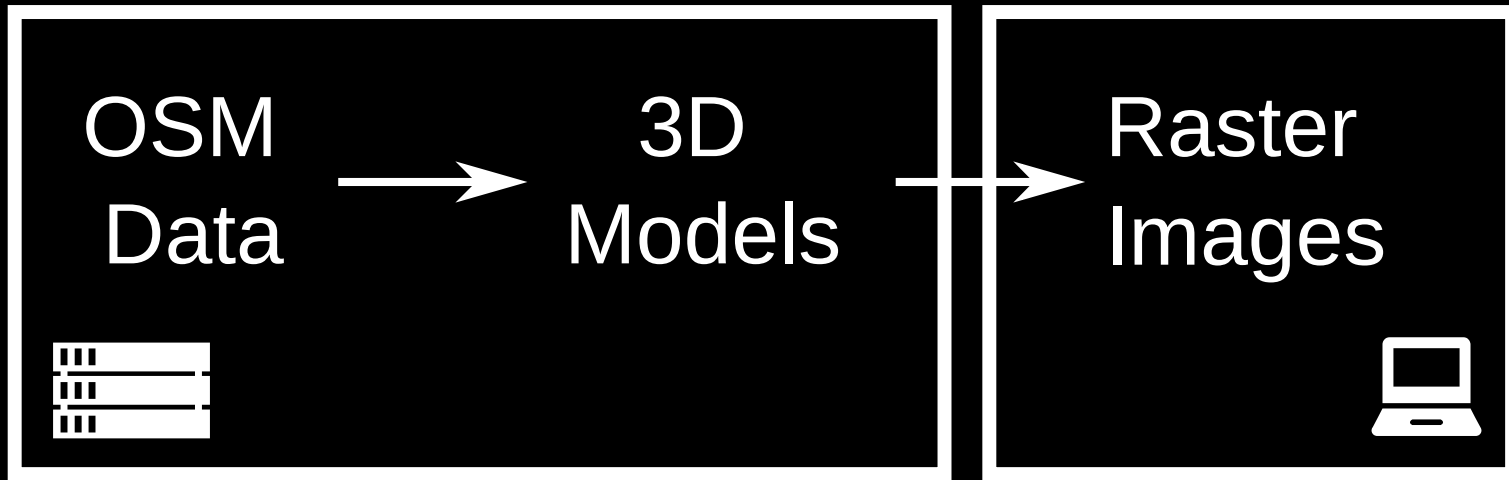
Gaming (SuperTuxKart)

Isometric tiles

maps.osm2world.org

Goal: Technology upgrade

from 2D PNG tiles + OpenLayers
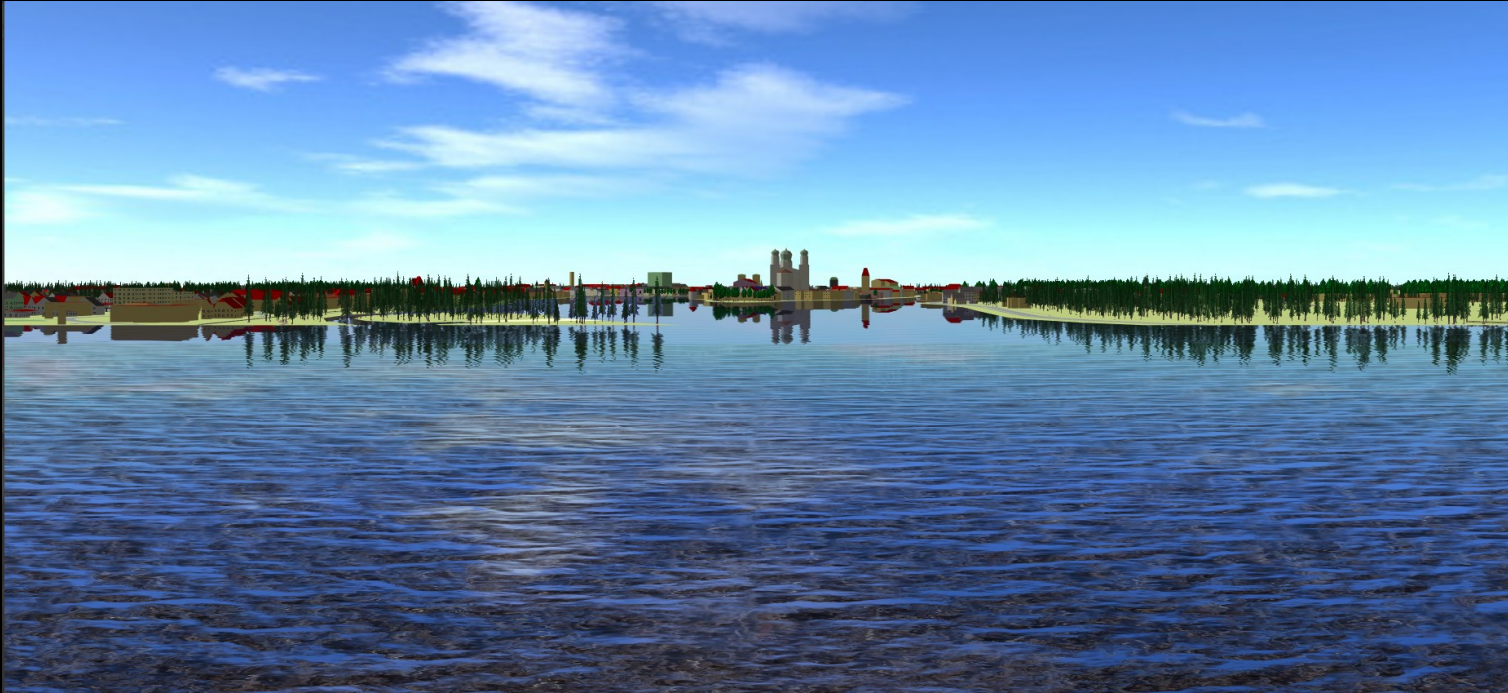to WebGL-based web client

Architecture: Before

OSM Data → 3D Models → Raster Images

Architecture: After

OSM Data → 3D Models → Raster Images

Architecture: Future?

OSM Data → 3D Models → Raster Images
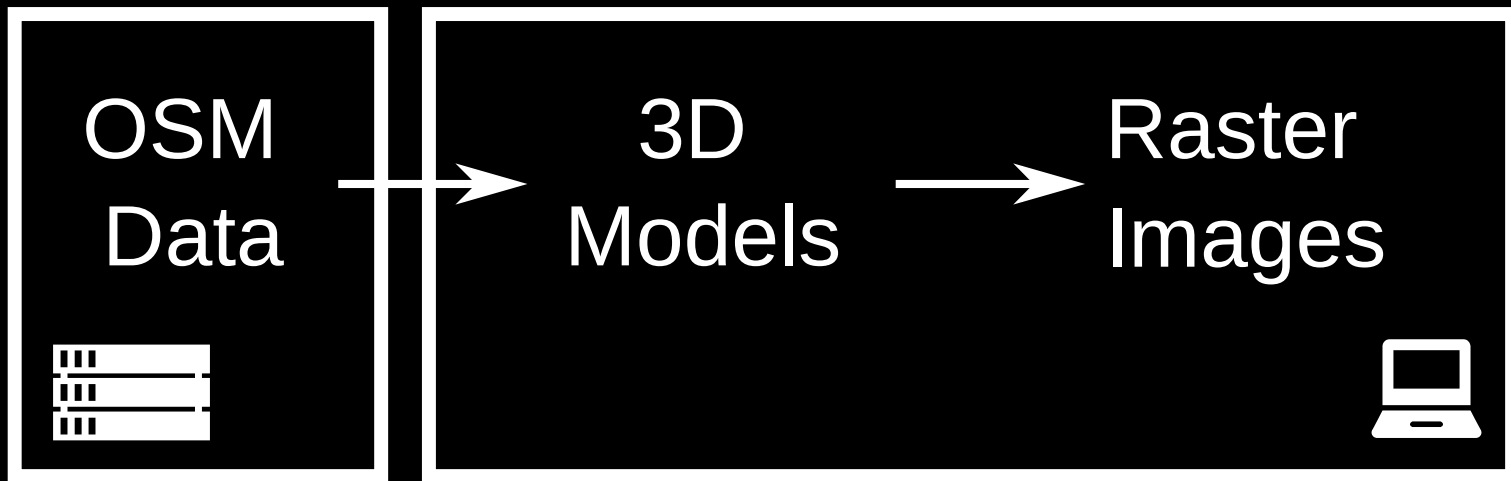
Prototype demonstration (live)

Moscow

Warsaw

Toronto
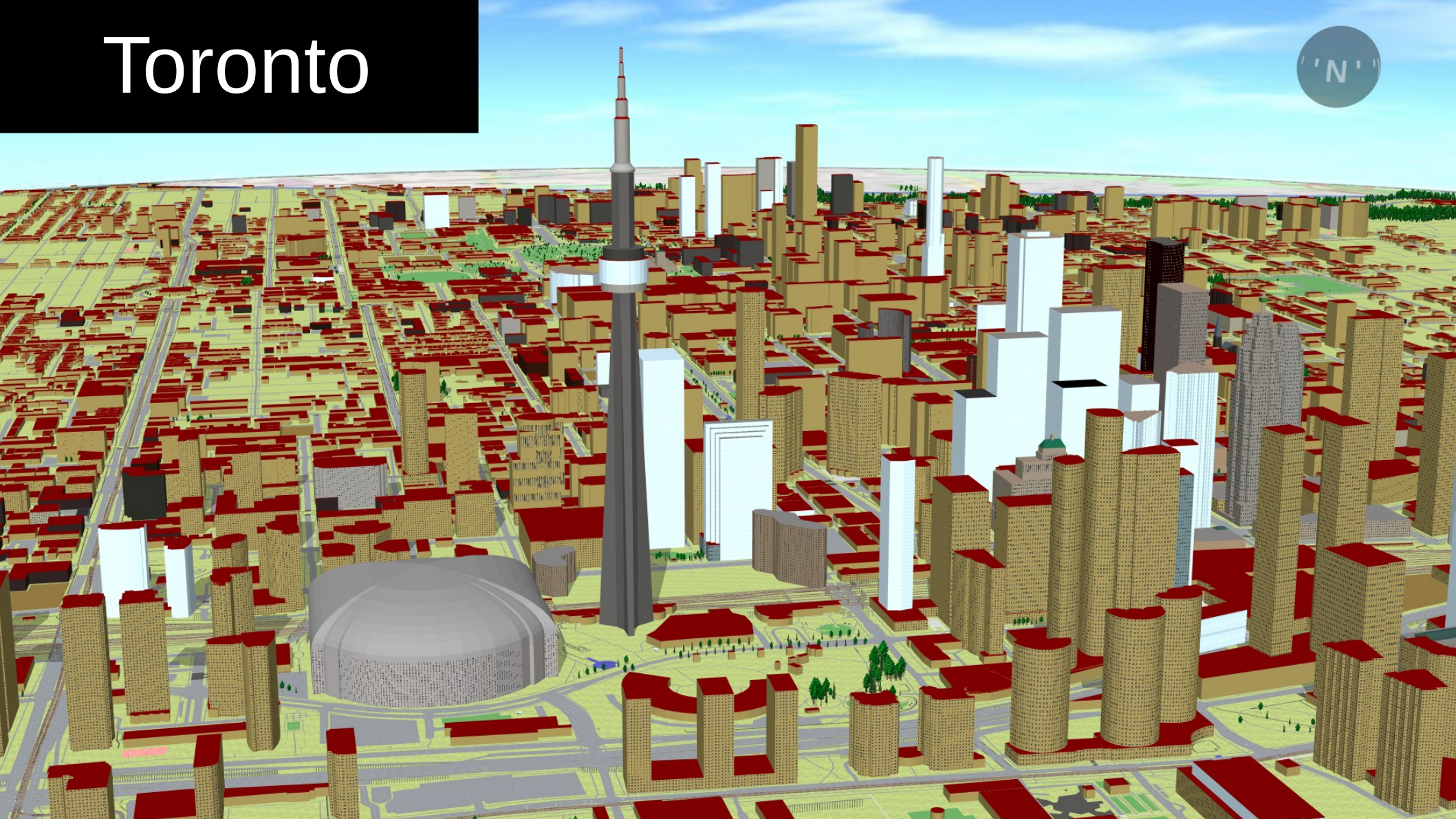
Paris

3dmr.eu

Model encoding

OSM Data → 3D Models → Raster Images

Model encoding

OSM Data → 3D Models → Raster Images

Protobuf tiles
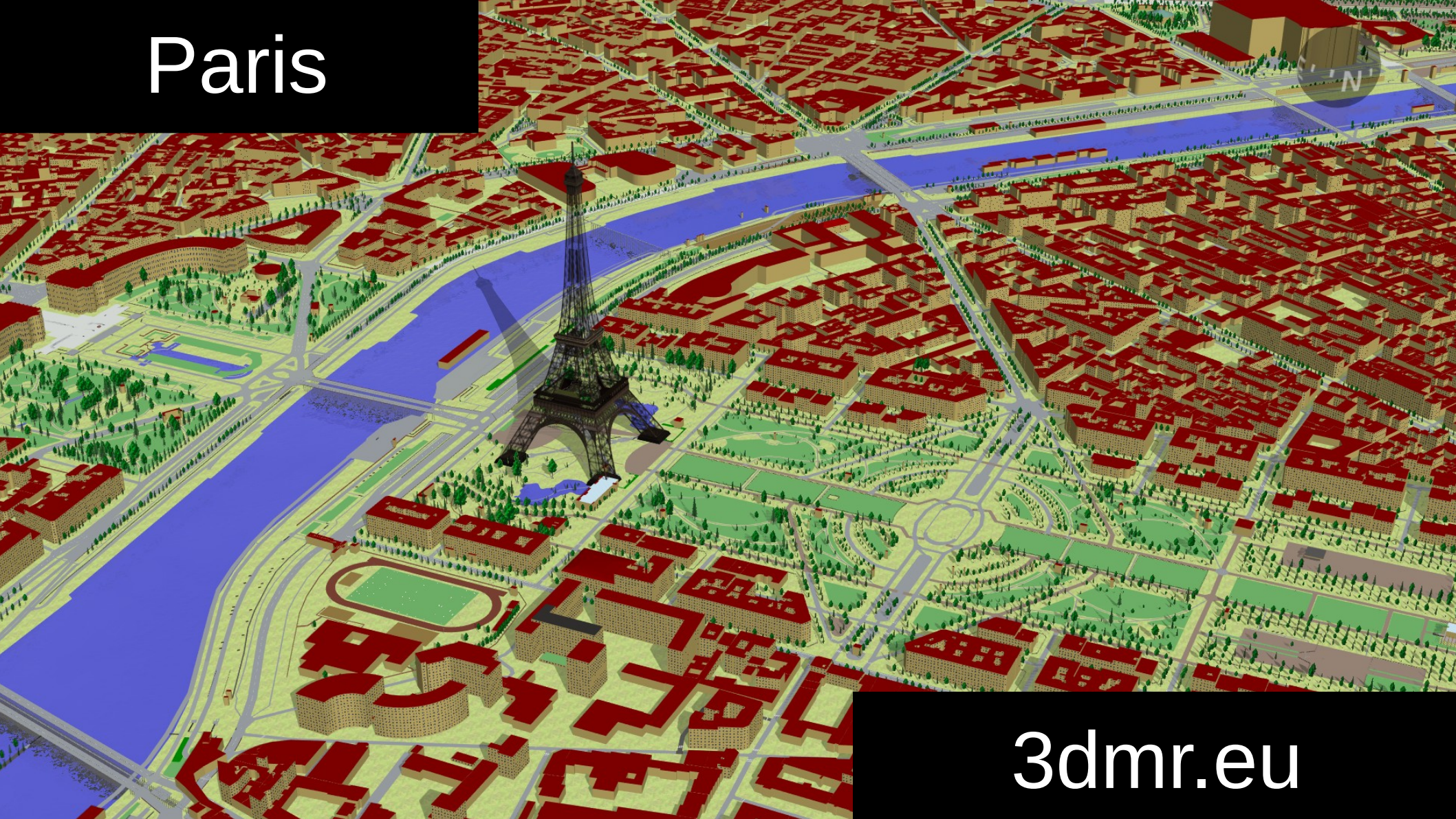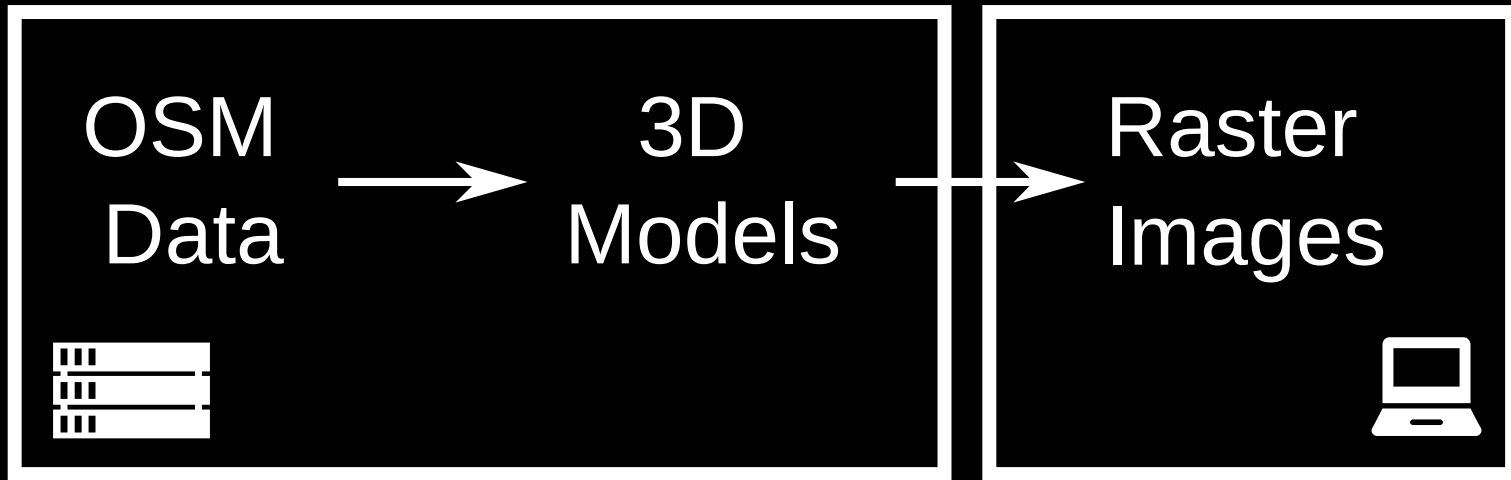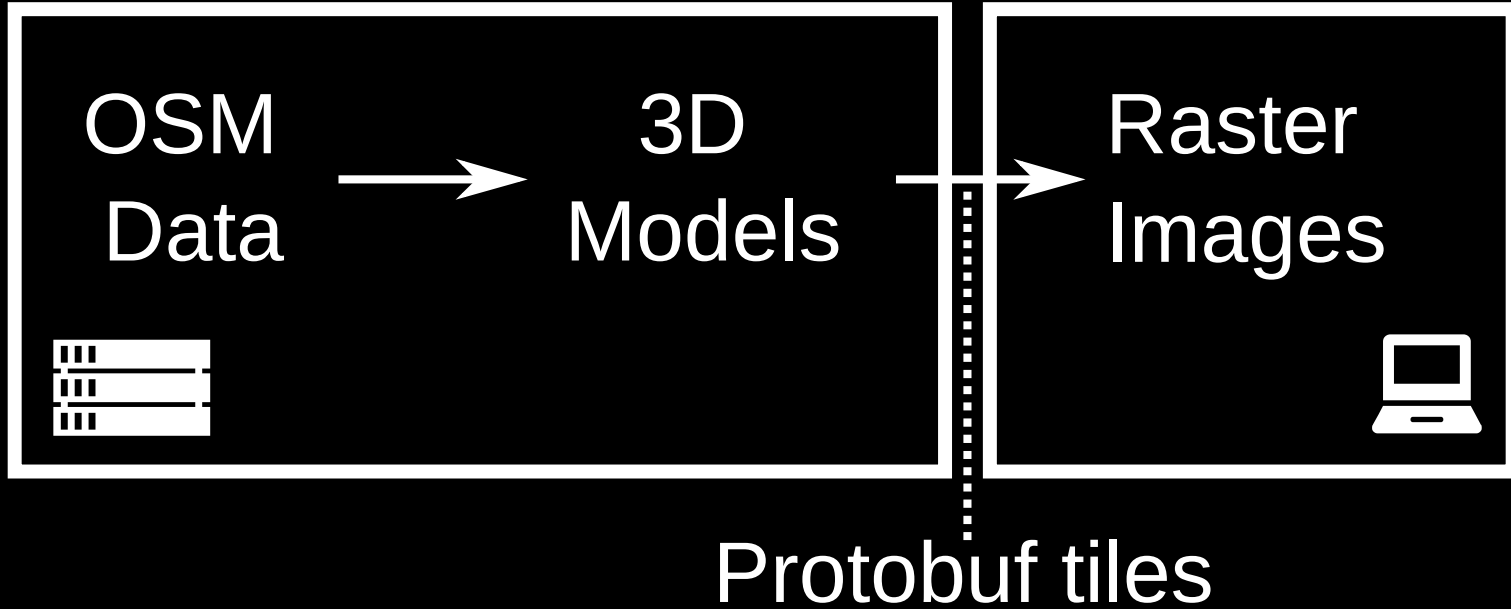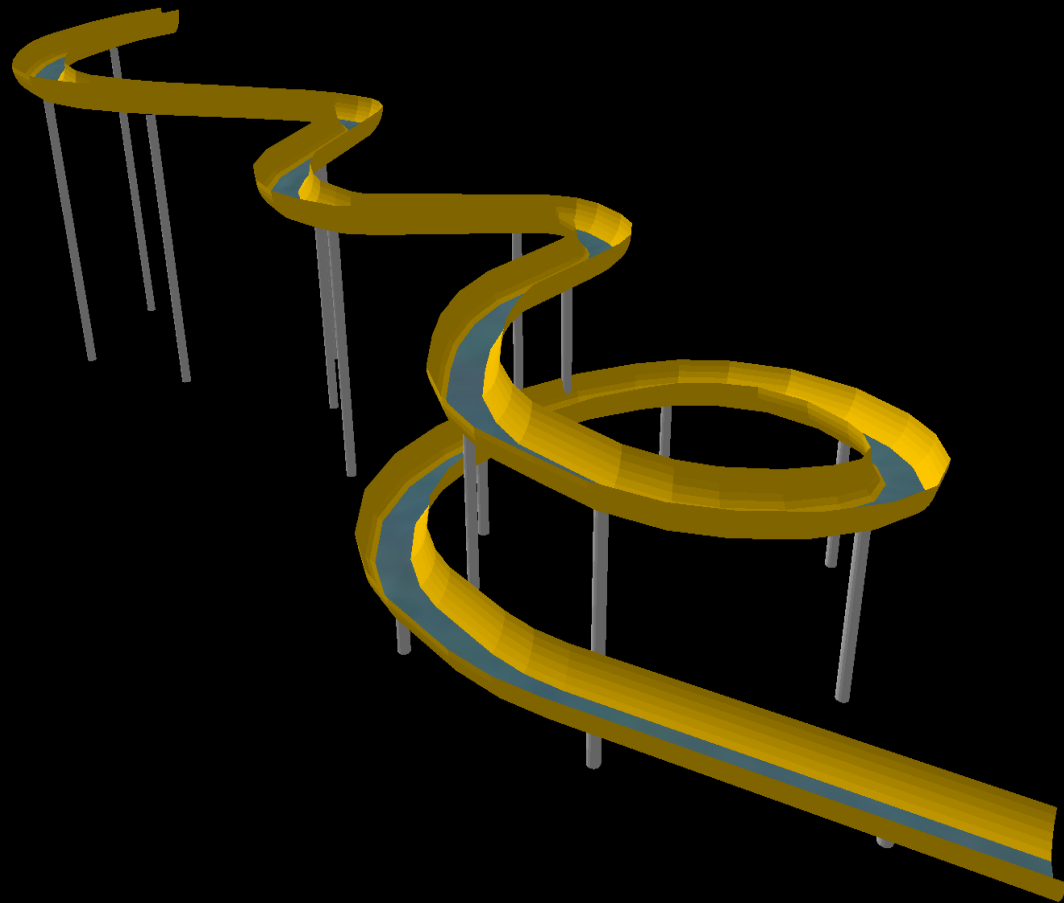
Colorable texture layers

Texture sources

- Raster images

- Vector graphics (SVG)

- Procedural, e.g. text

  … for traffic signs,
  inscriptions, etc.

  GSoC 2019 project
  by Jason Manoloudis

Client-side shape extrusion

Client-side shape extrusion

Other optimizations

- Instancing (trees, parked cars, sleepers, …)
- Indexed geometry
- Variable-length encoding of coordinates

Other work-in-progress features

- Terrain elevation
- Additional light sources
- Simple Indoor Tagging support
- VR mode

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