

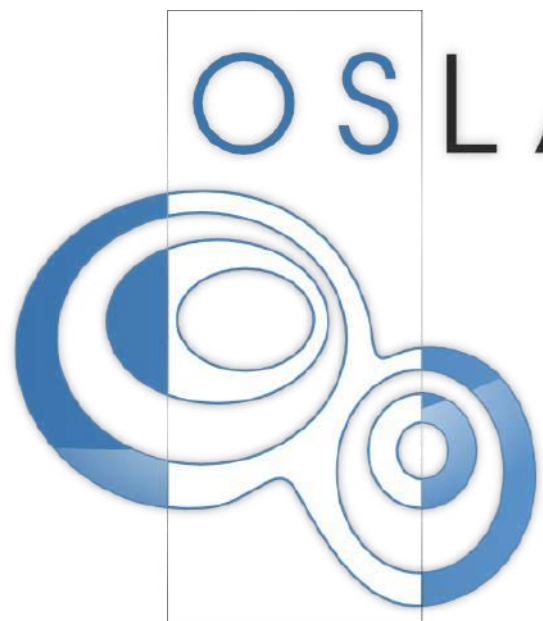


2 & 3 JUILLET 2019

LES JOURNÉES NATIONALES
GÉONUMÉRIQUES
de L'AFIGÉO & DÉCRYPTAGÉO

ARTOIS EXPO - ARRAS - HAUTS-DE-FRANCE





OSLANDIA

2 & 3 JUILLET 2019

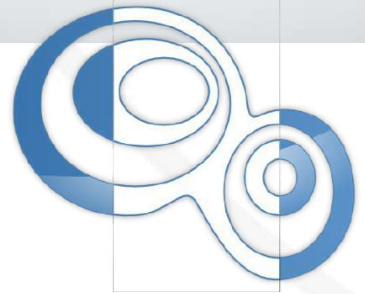
LES JOURNÉES NATIONALES
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ARTOIS EXPO - ARRAS - HAUTS-DE-FRANCE

3D et OpenSource, du capteur à l'intelligence artificielle

Vincent Picavet
CEO - Oslandia

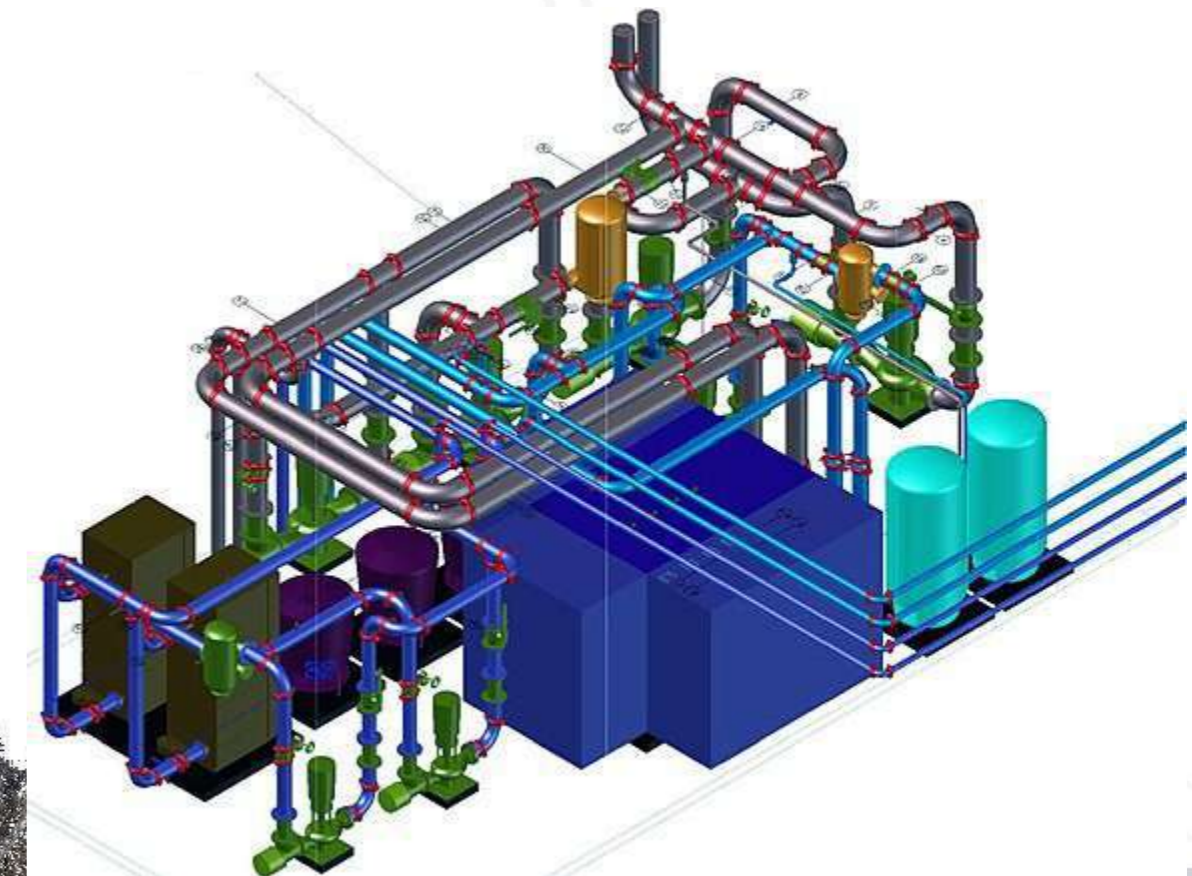
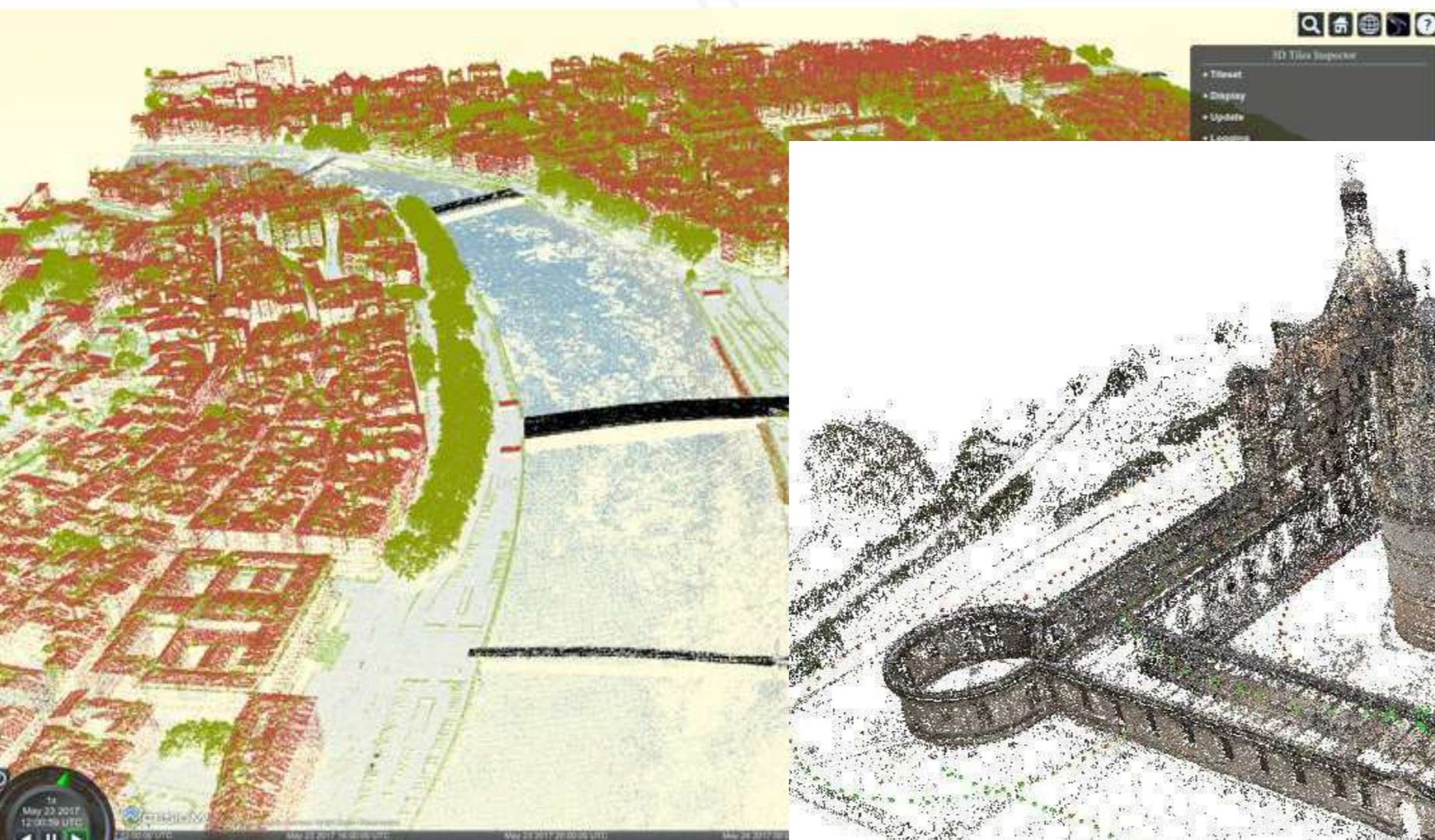




→ Différents types de données

- Vecteur 3D, PointClouds, Bulles 360°, Meshes

→ Forte volumétrie













THE HORSE
Beer Garden

BEER GARDEN

11:10

11:10



Depuis le capteur...



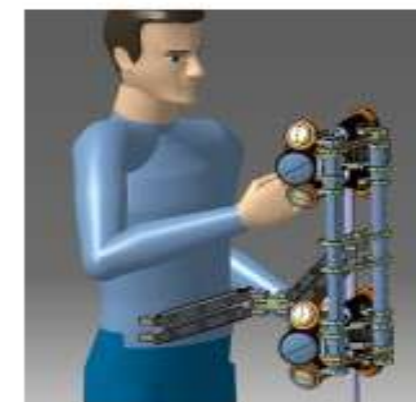
Mobile Mapping



Véhicules légers



Drones



Aérien



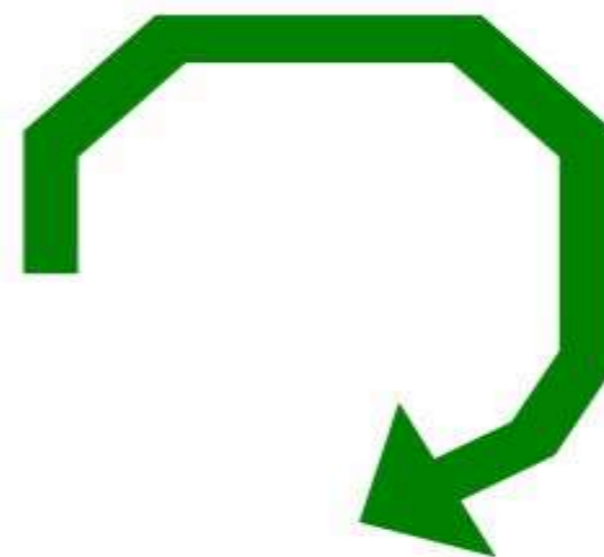
Satellite

10cm

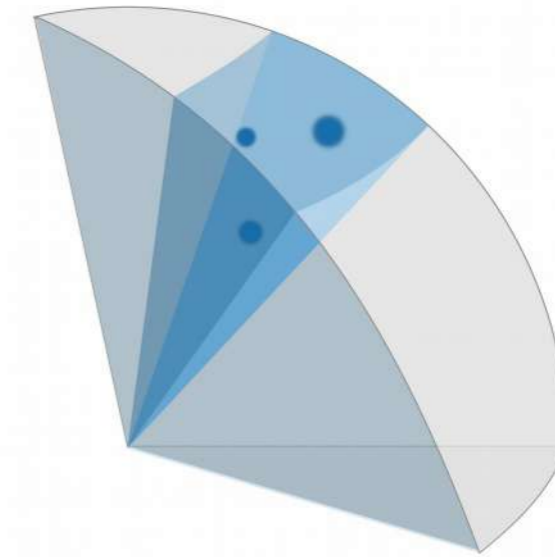
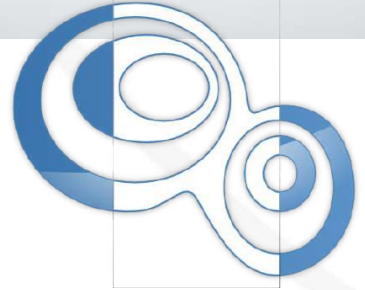
1cm

1m

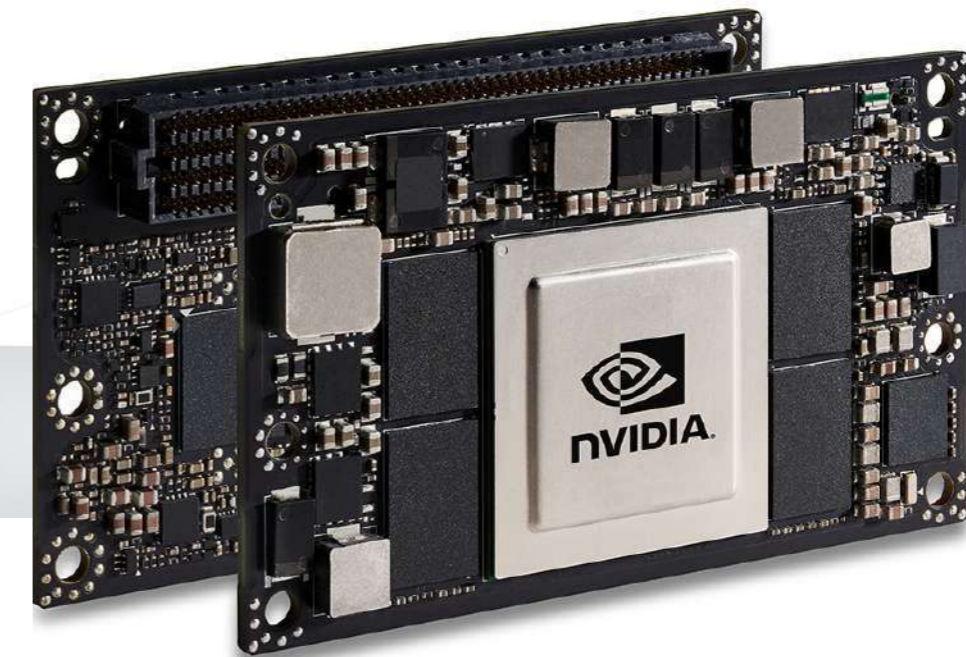
1mm

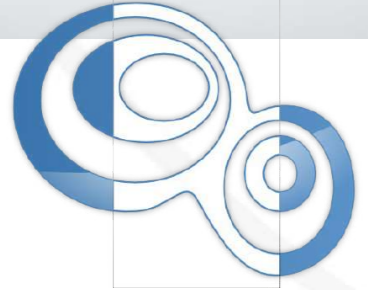


Portatif, Sac à dos, smartphone...



LI³DS

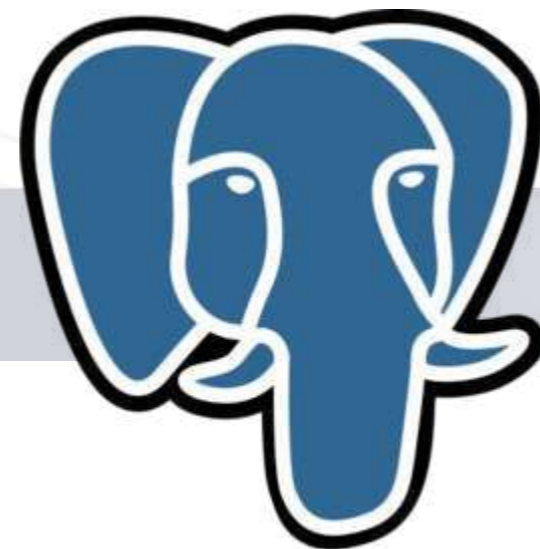




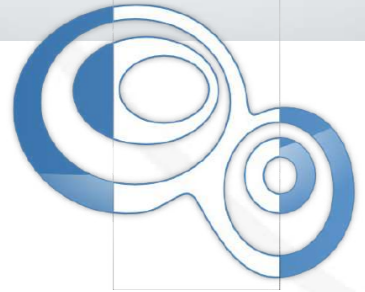
- 3DTiles & py3dtiles
- PostGIS 3D (SFCGAL)
- PointClouds
 - Entwine, 3DTiles
 - PostgreSQL / PgPointCloud



3DTiles[™]



entwine



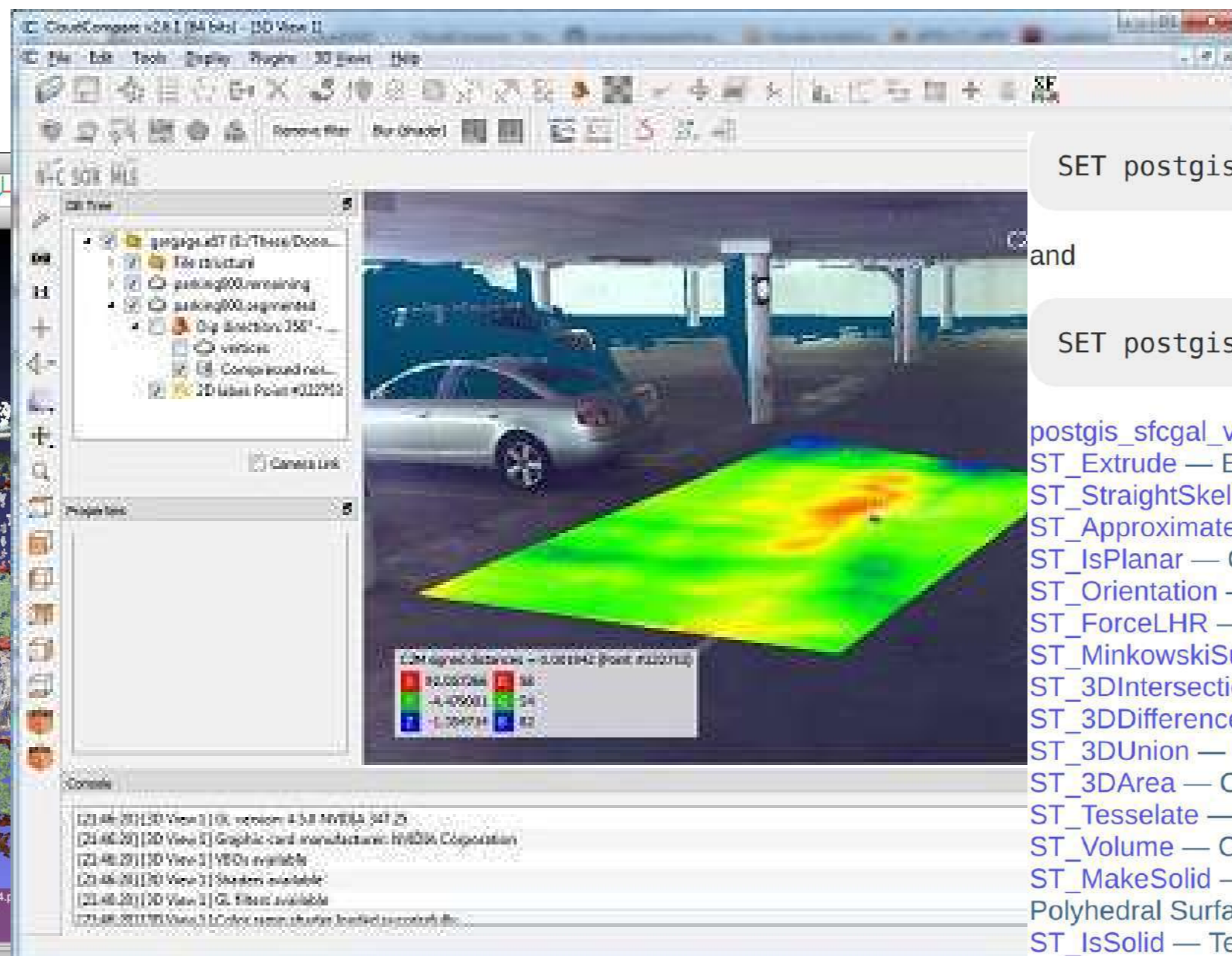
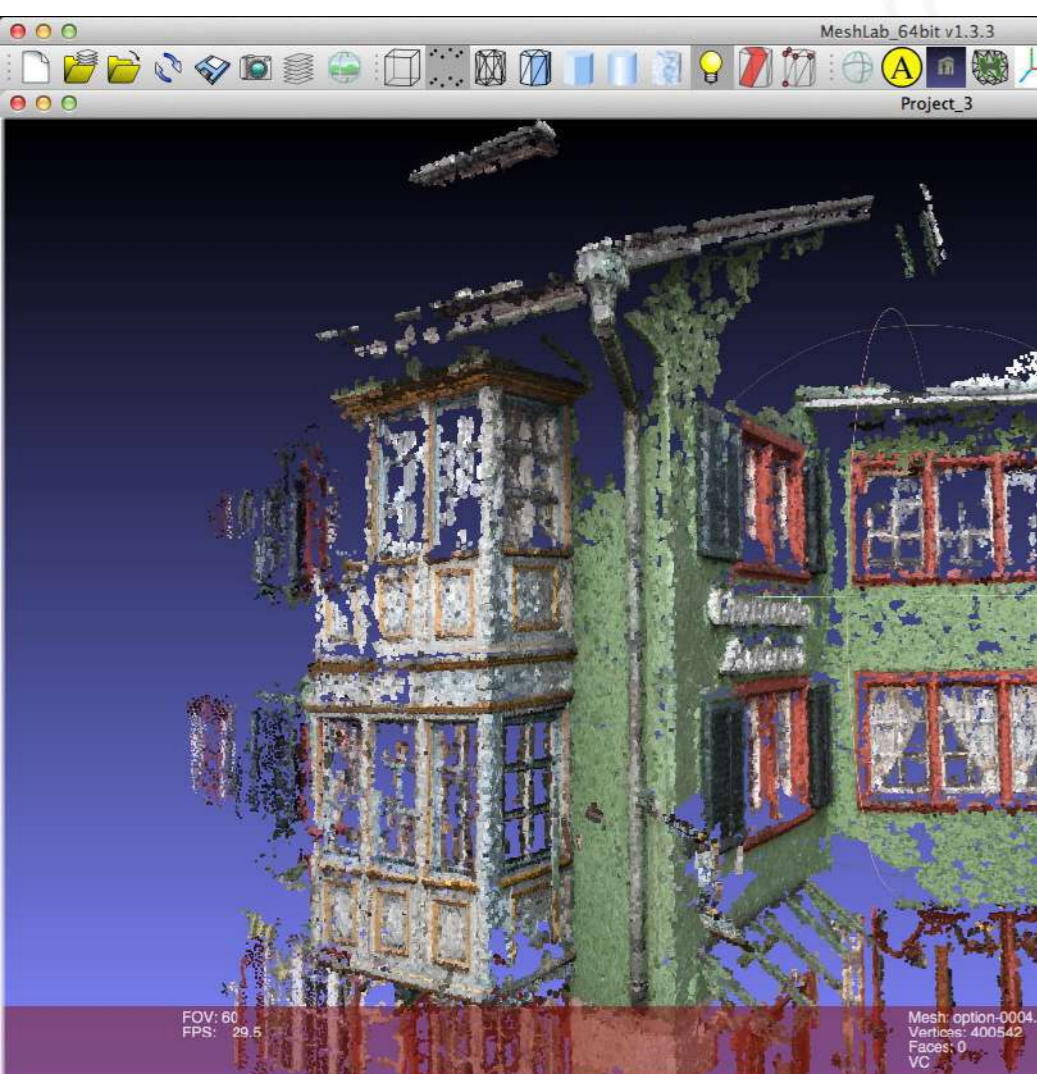
- Accès et Streaming
- Standardisation (OGC)
 - 3D Portrayal Service
 - 3D Tiles





→ CloudCompare, MeshLab

→ PostGIS 3D



```
SET postgis.backend = sfcgal;
```

and

```
SET postgis.backend = geos;
```

`postgis_sfcgal_version` — Returns the version of SFCGAL in use

`ST_Extrude` — Extrude a surface to a related volume

`ST_StraightSkeleton` — Compute a straight skeleton from a geometry

`ST_ApproximateMedialAxis` — Compute the approximate medial axis of an areal geometry

`ST_IsPlanar` — Check if a surface is or not planar

`ST_Orientation` — Determine surface orientation

`ST_ForceLHR` — Force LHR orientation

`ST_MinkowskiSum` — Performs Minkowski sum

`ST_3DIntersection` — Perform 3D intersection

`ST_3DDifference` — Perform 3D difference

`ST_3DUnion` — Perform 3D union

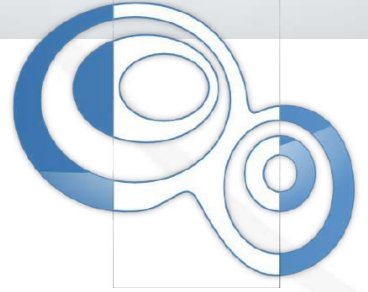
`ST_3DArea` — Computes area of 3D surface geometries. Will return 0 for solids.

`ST_Tessellate` — Perform surface Tessellation of a polygon or polyhedralsurface and return a Polyhedral Surface

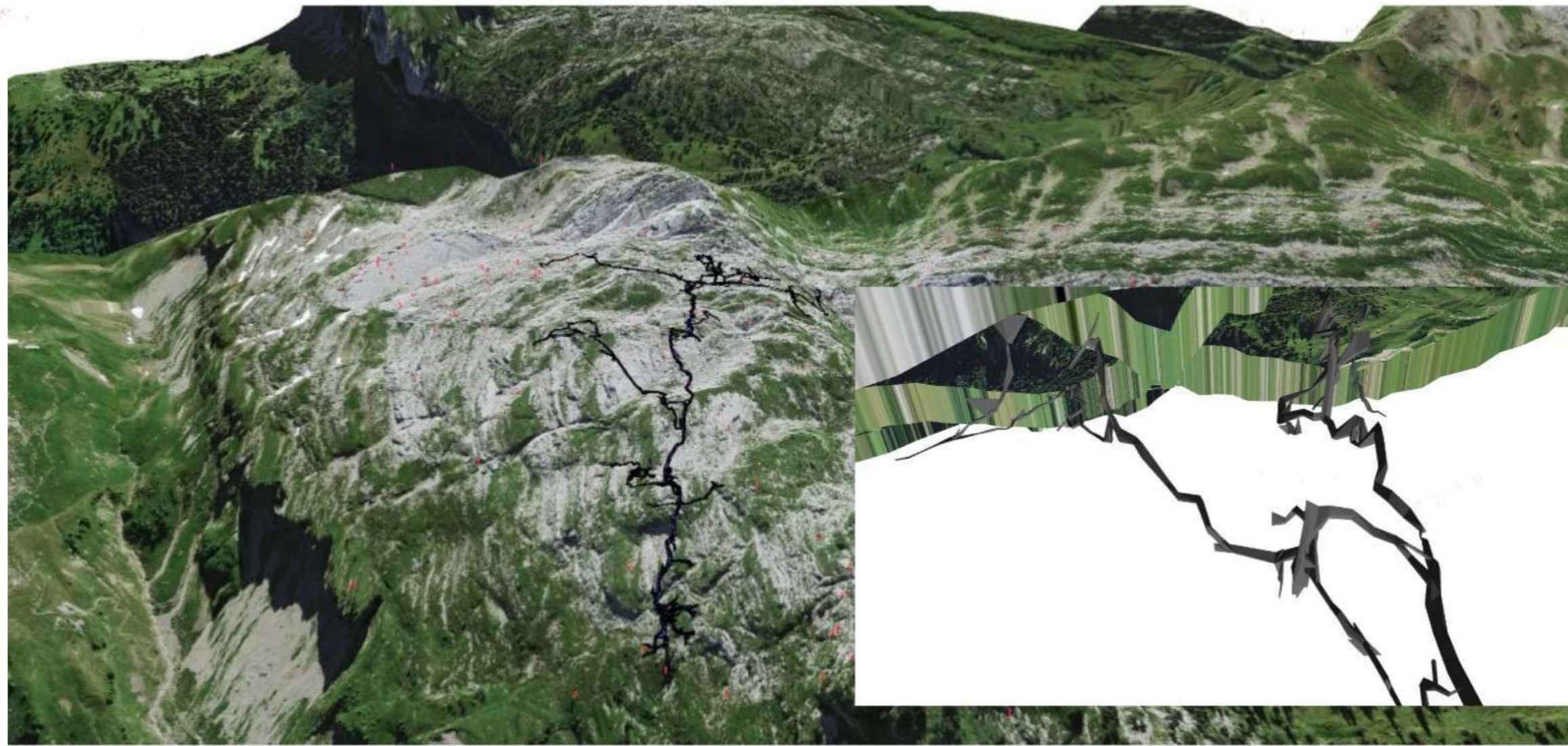
`ST_Volume` — Computes the volume of a 3D solid. If applied to surface (even closed) will return 0.

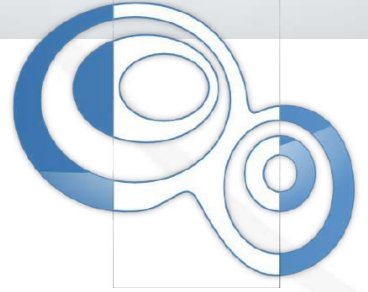
`ST_MakeSolid` — Cast the geometry into a solid. No check is performed. To obtain a valid Polyhedral Surface or a closed TIN.

`ST_IsSolid` — Test if the geometry is a solid. No validity check is performed.

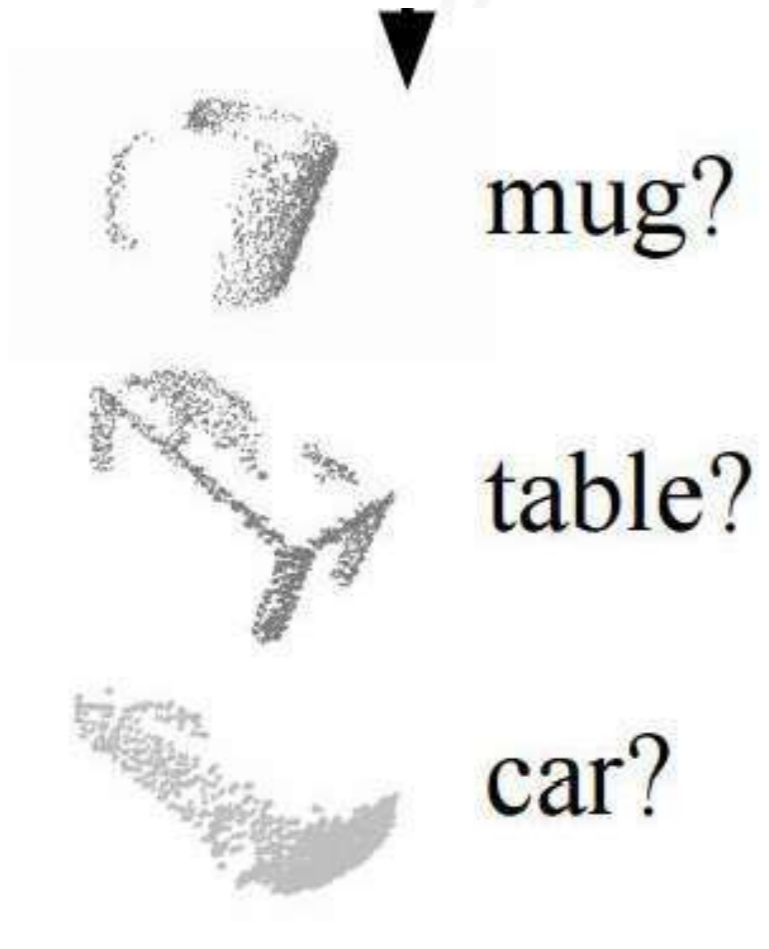
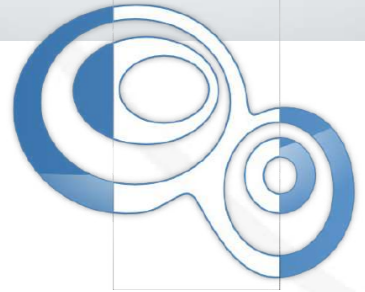


→ QGIS 3D arrive !





→ <https://vimeo.com/344797033>

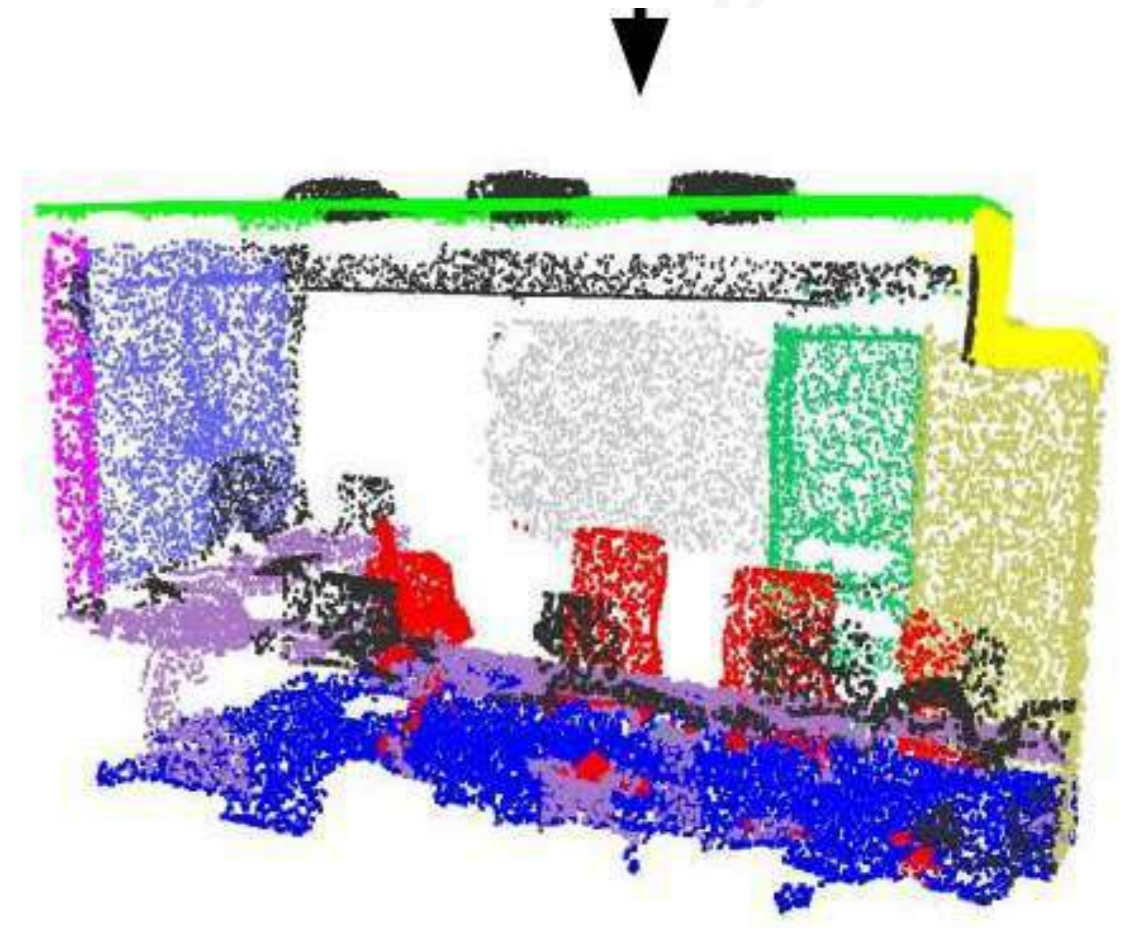


mug?
table?
car?

Classification



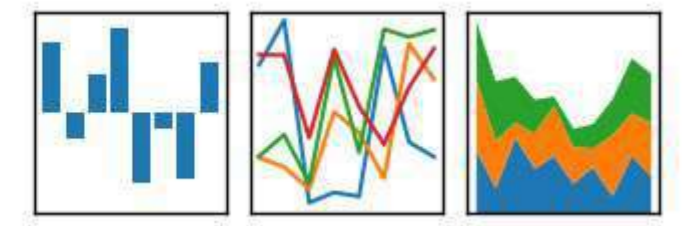
Part Segmentation

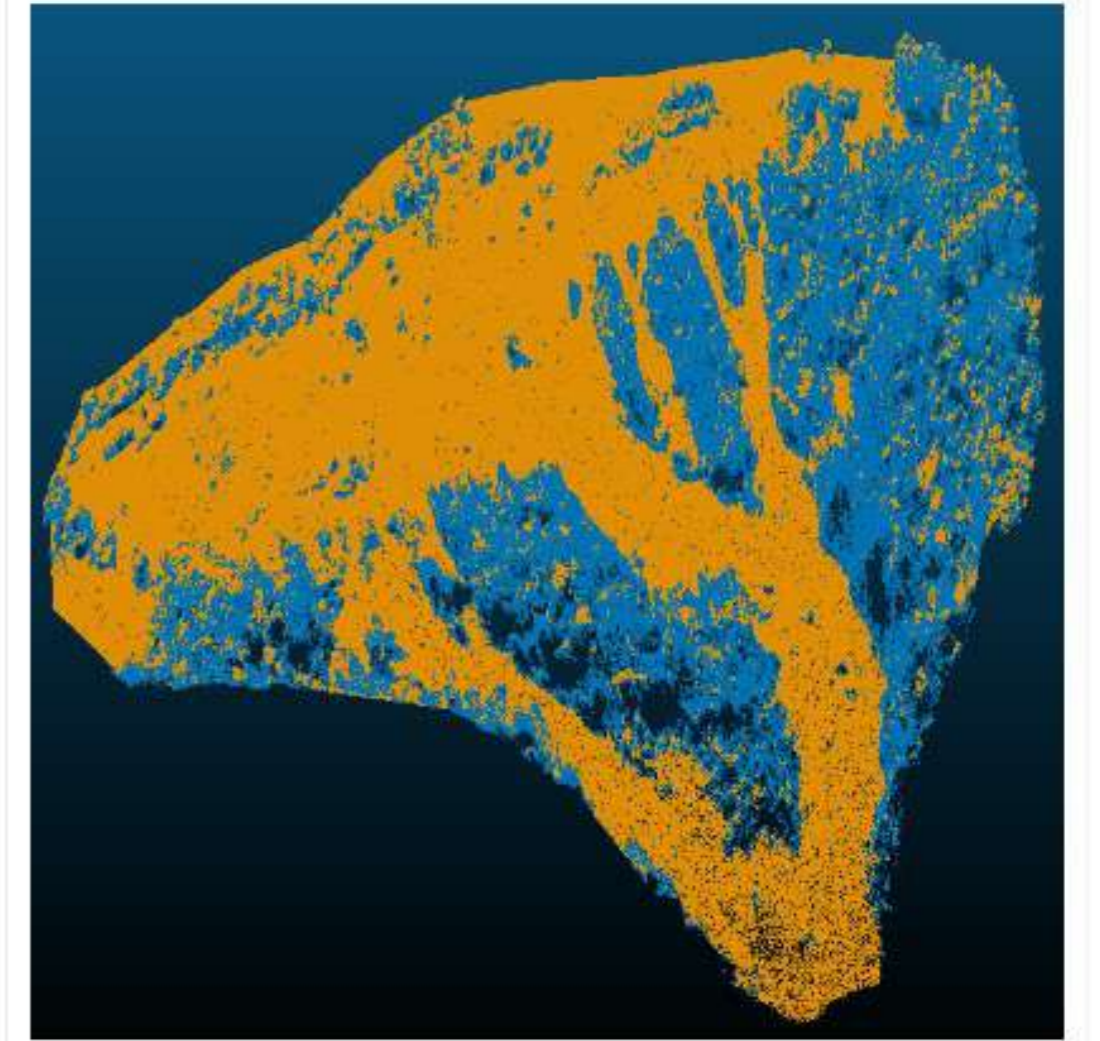
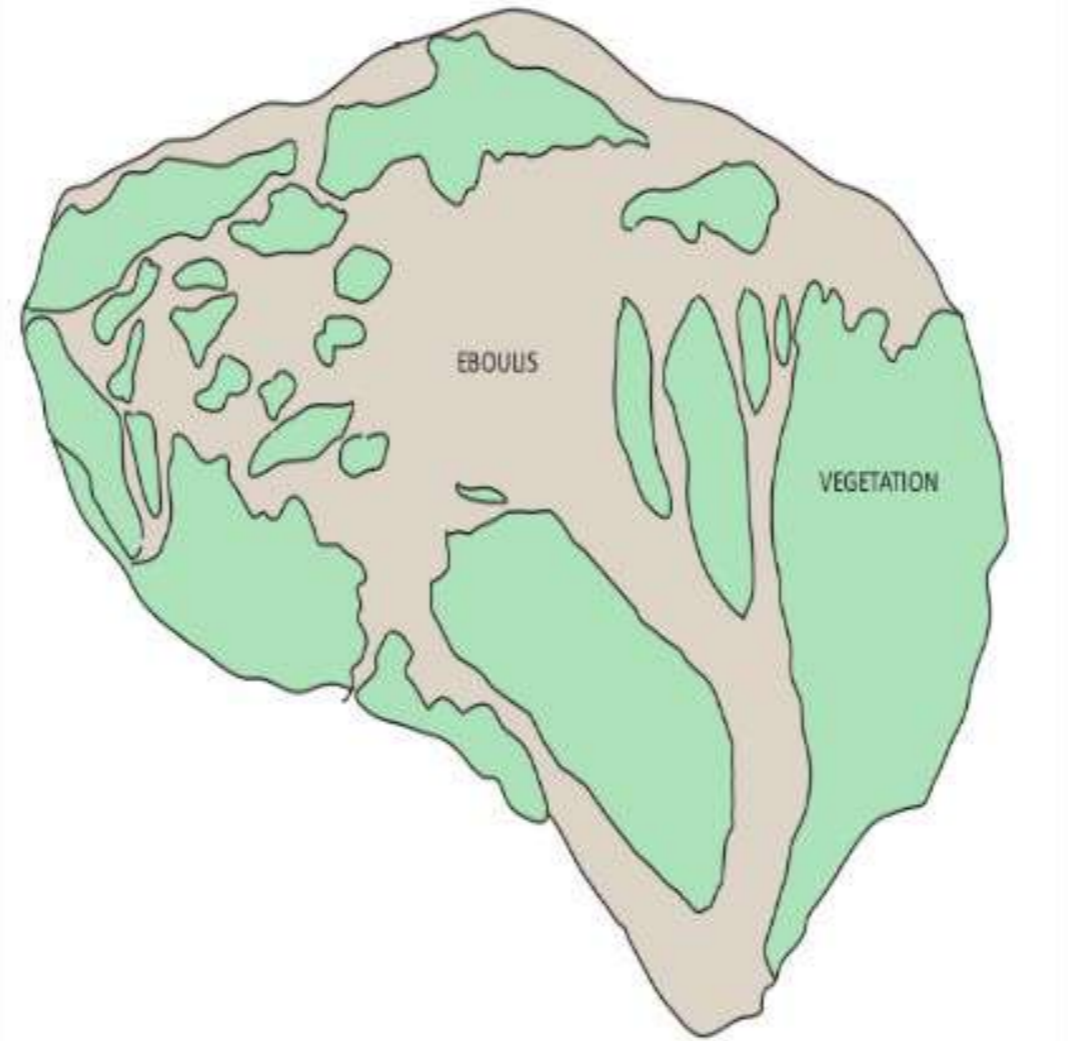
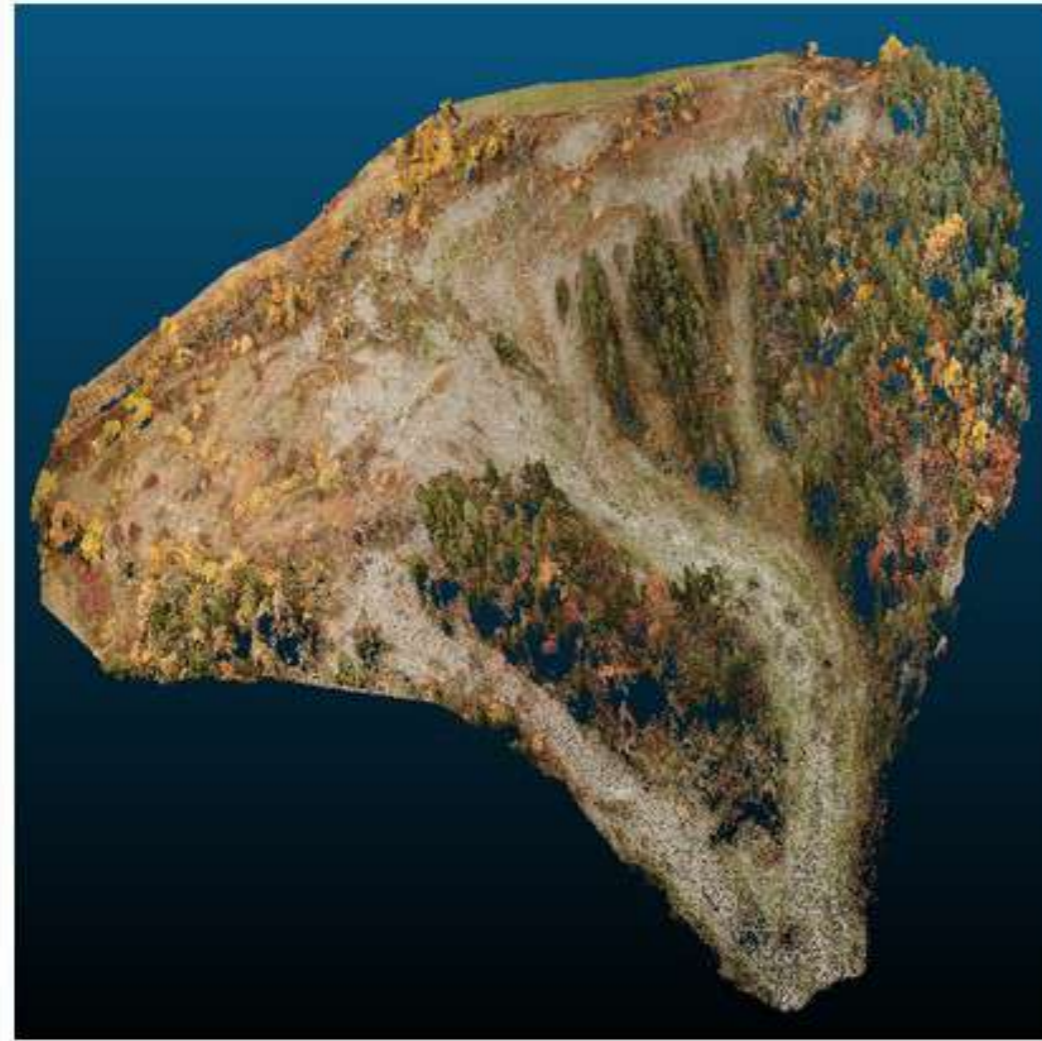
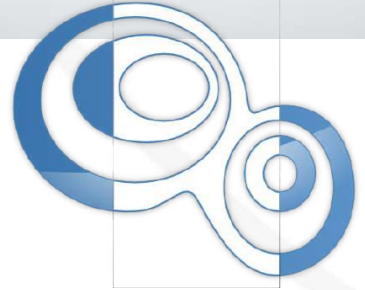


Semantic Segmentation

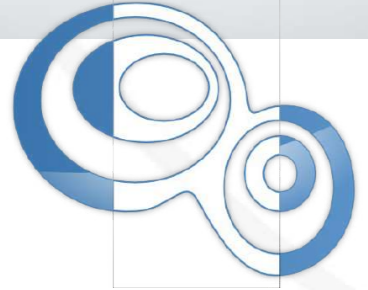


pandas
 $y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$





OSLANDIA ... mettez vos TB de données 3D sur le web !



→ <https://vimeo.com/344796801>



En savoir plus

<http://oslandia.com>

Vincent.picavet@oslandia.com

[@Oslandia](https://github.com/Oslandia) – github.com/Oslandia

