



M2B – Mapas y OpenData: herramientas de localización, visualización y análisis de geodatos

TECNOLOGÍAS SIG





Mallas discretas y algoritmos en JS



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Mallas discretas y algoritmos en JS

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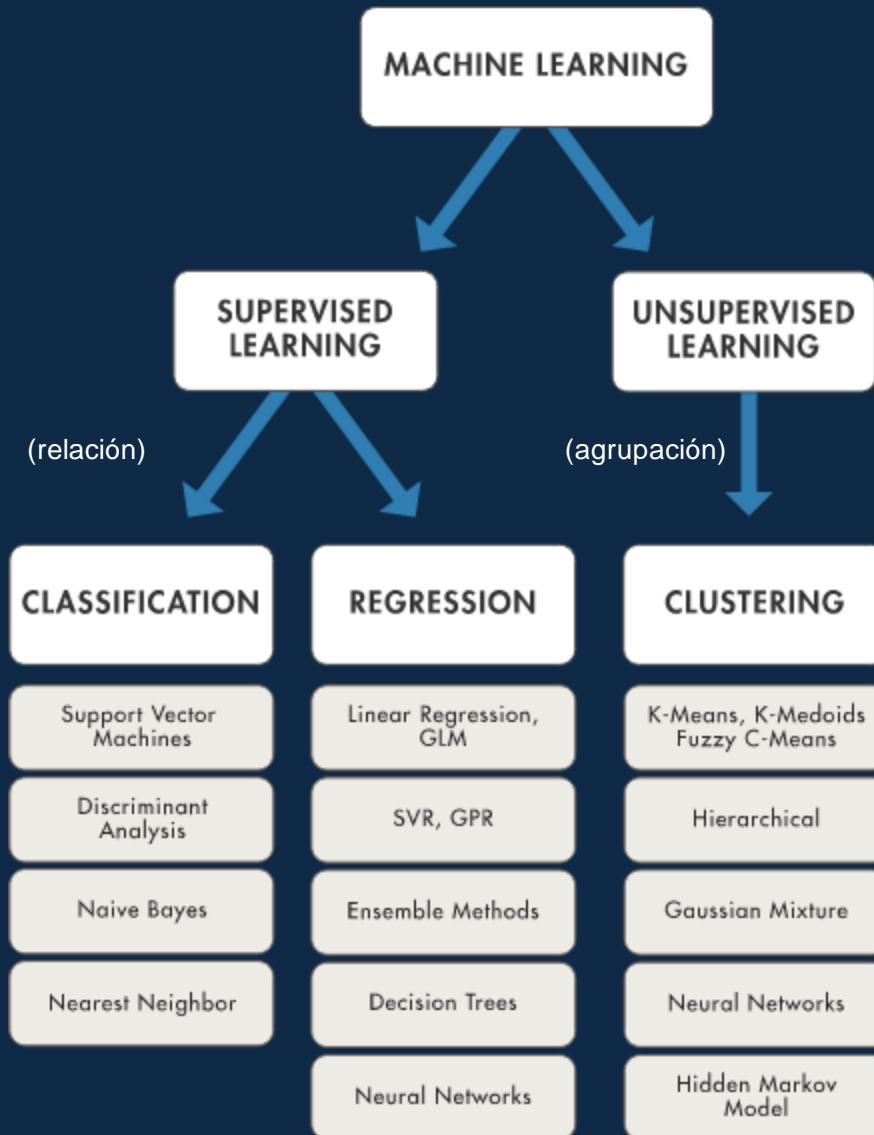
Machine Learning

El **aprendizaje automático** (del inglés, *machine learning*) es ... una rama de la inteligencia artificial, cuyo objetivo es desarrollar técnicas que permitan que las computadoras *aprendan*

De forma más concreta, los investigadores del aprendizaje de máquinas buscan algoritmos y para convertir muestras de datos en programas de computadora, sin tener que escribir los últimos explícitamente.

Los modelos o programas resultantes deben ser capaces de generalizar comportamientos e inferencias para un conjunto más amplio (potencialmente infinito) de datos.

Algoritmos



Clustering: Agrupación por atributos

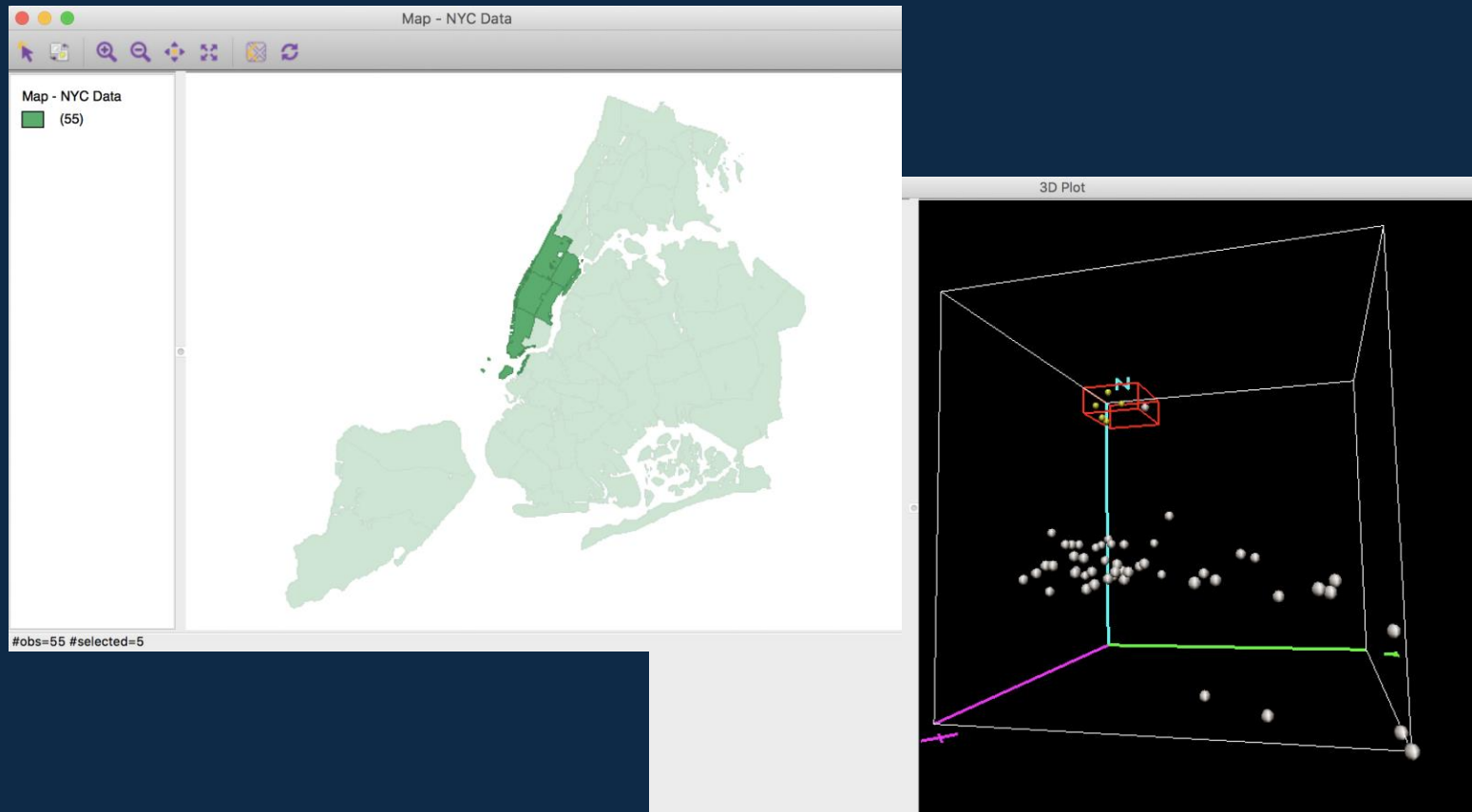
Classification: Identificación a partir de variables

Regression: Estimación de valores entre una variable dependiente y variables independientes



<https://github.com/sacridini/Awesome-Geospatial>

GeoDa un “clásico” de los SIG



<https://geodacenter.github.io/>

Javascript



<https://github.com/Turfjs>

<http://rousseau.io/turf-mapboxjs/>



<http://geoblaze.io/>



<https://www.tensorflow.org/js>

“Problema”

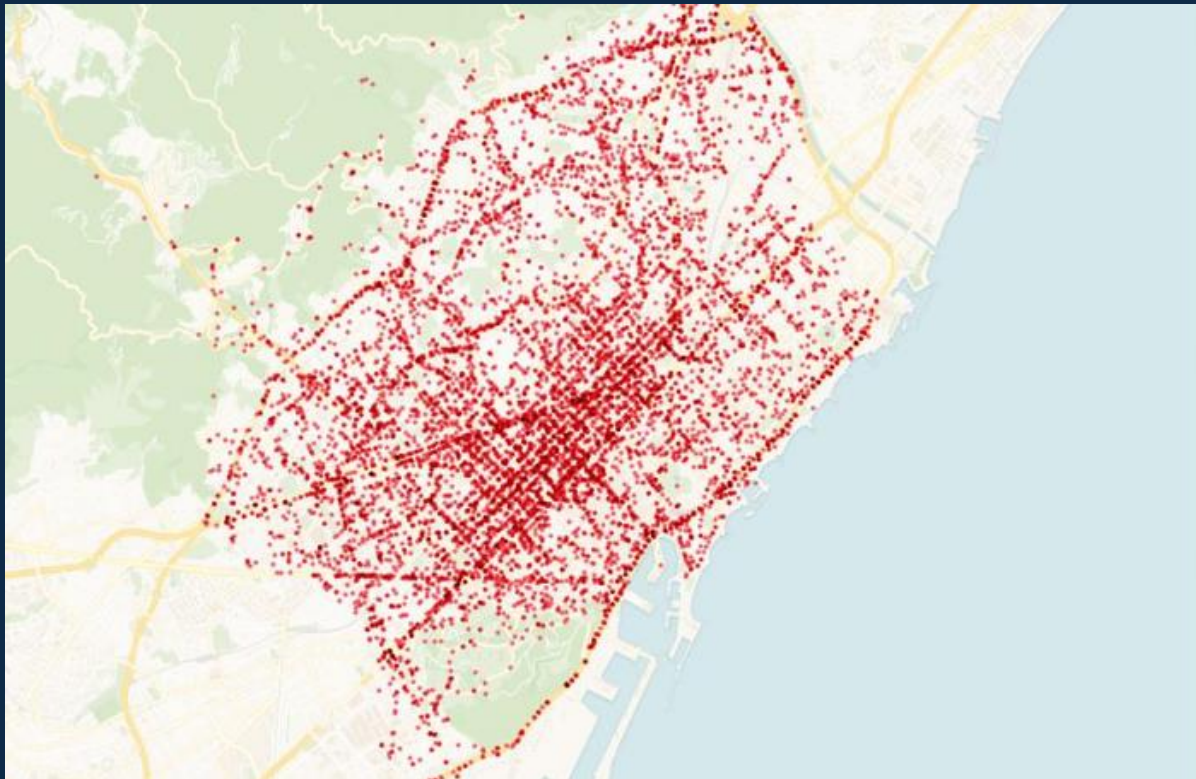
Cuando analizamos y utilizamos algoritmos con fenómenos puntuales (puntos) y queremos realizar predicciones.

Las coordenadas pueden NO ser tomadas en consideración tanto com input o output



Accidentes tráfico

¿En que sitios de BCN es más probable que haya un accidente un Sábado a las 5h de la mañana?

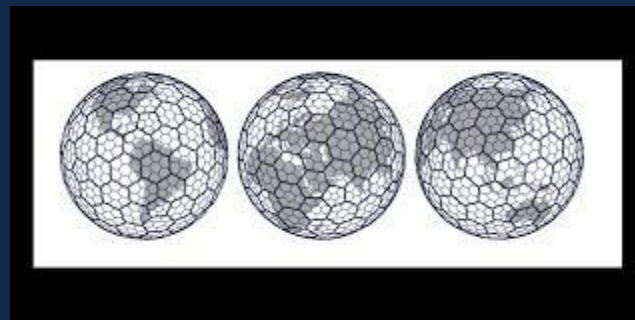


Mallas globales discretas

Hierarchical Geospatial Indexing

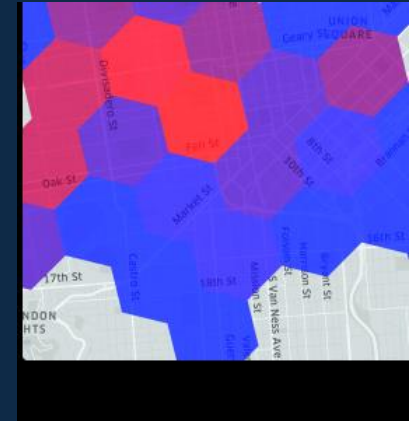
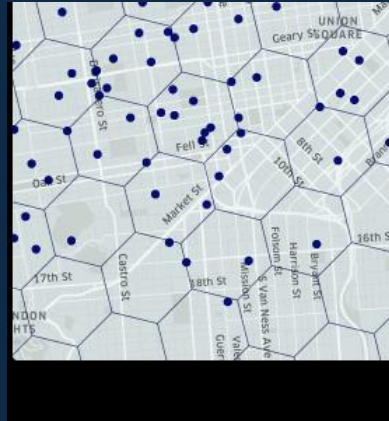
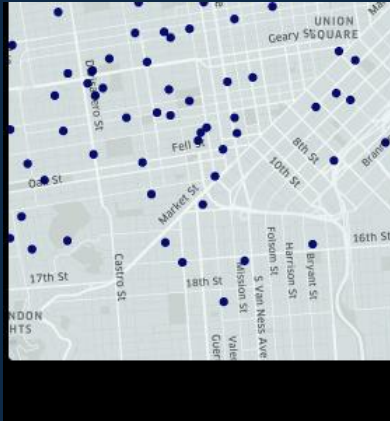
Son mallas (grids) de ámbito mundial, que dividen el mundo en -rectángulos, triángulos o hexágonos a diferentes resoluciones (niveles de zoom) .

Cada celda tiene un identificador único

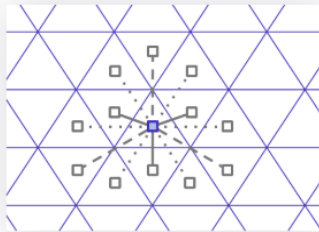


https://en.wikipedia.org/wiki/Discrete_global_grid

Mallas discretas

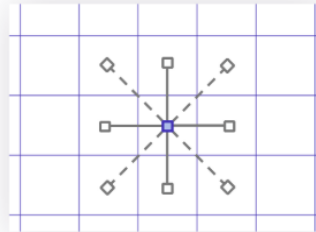


Triangle



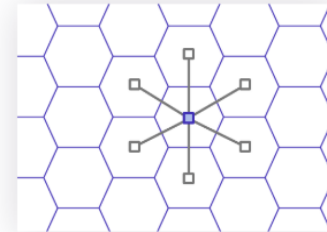
Triangles have 12 neighbors

Square



Squares have 8 neighbors

Hexagon



Hexagons have 6 neighbors

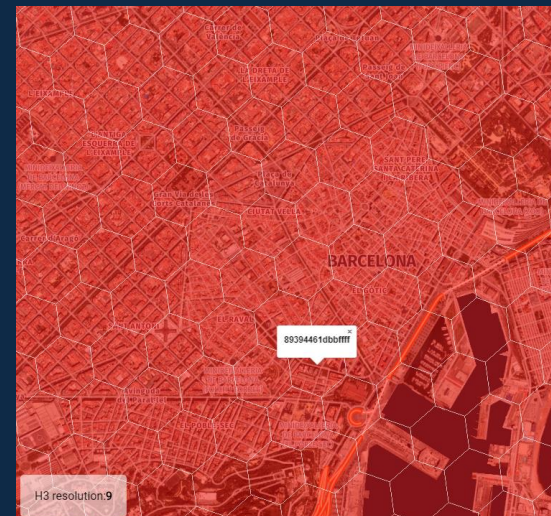
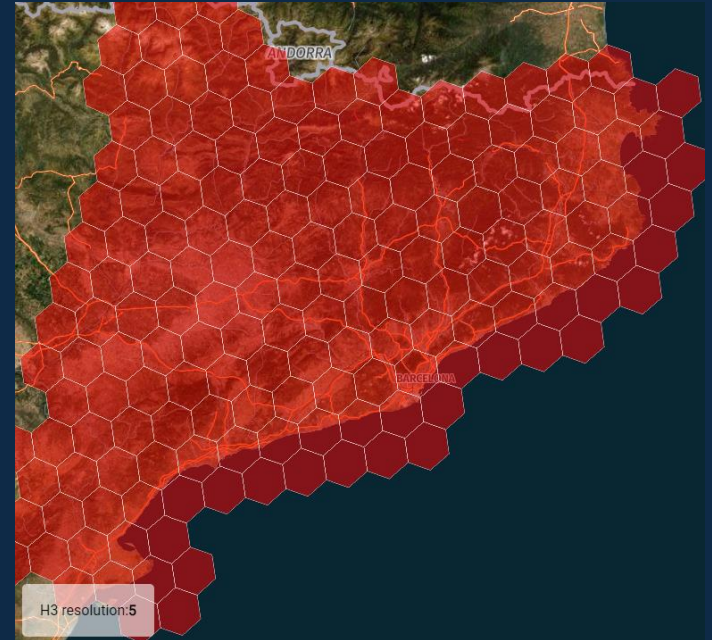
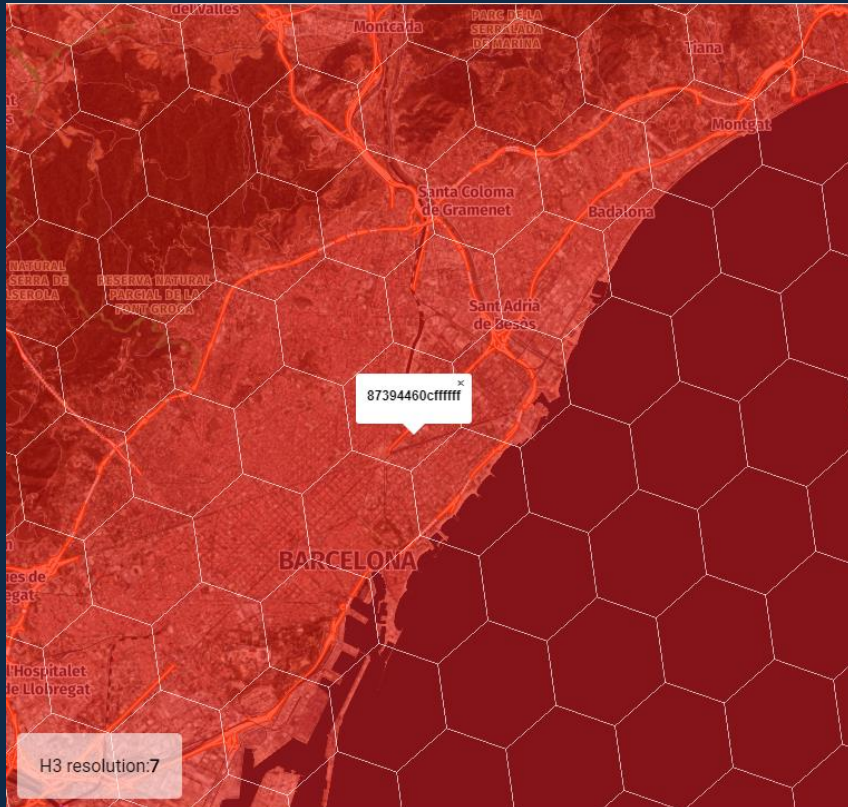
H3 -Uber : <https://eng.uber.com/h3/> (hexagonal)

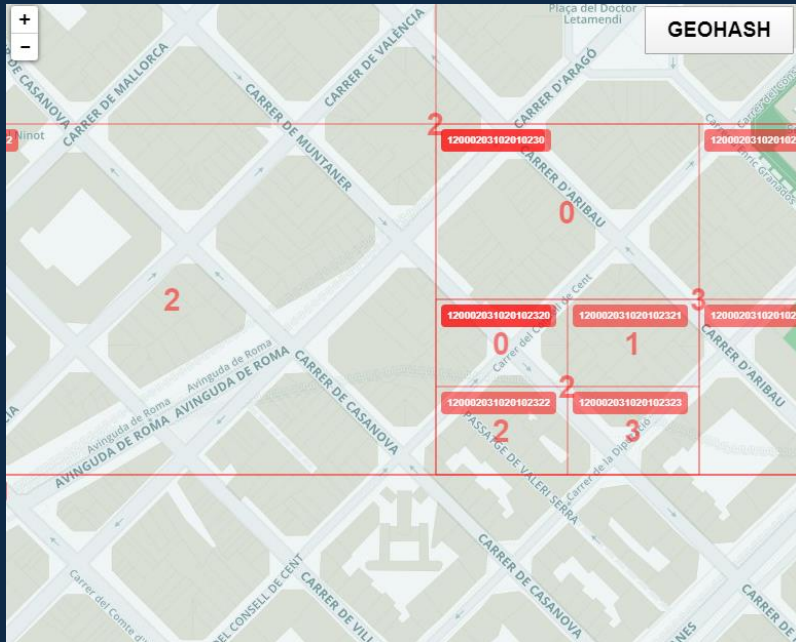
GeoHash: <https://en.wikipedia.org/wiki/Geohash> (rectangular)

[Google Location Codes: https://plus.codes/](https://plus.codes/) (rectangular)

What3Words: <https://what3words.com/> (rectangular)

Malla H3





Modelo de Negocio

Avuxi: clasifica todos los rincones del planeta según su popularidad

<https://www.avuxi.com/>

The screenshot displays the Avuxi website interface. At the top, the Avuxi logo is on the left, and navigation links for Products, Demos, Pricing, Blog, and Contact are in the center. On the right, there are buttons for 'Free Trial' and 'Log In'. Below the navigation bar, a search bar contains the text 'Ciutadella Park, Passeig de Picasso, Barcelona, Spain'. To the right of the search bar is a language selector button labeled 'English'. The main content area shows the search results for 'Ciutadella Park'. It includes a title 'Ciutadella Park', a location pin icon, and the text 'Superb location for Sightseeing!'. Below this, there are four circular rating icons: '9.8 Superb Sightseeing', '7.5 Very good Eating', '6.5 Good Shopping', and '7.2 Good Nightlife'. Further down, a section titled 'Nearby top locations' lists several places with their walking distance and time: 'Parc de la Ciutadella' (1 min), 'Museu de la Xocolata' (4 min), 'Mercat de Santa Caterina' (8 min), 'L'Antic Teatre' (10 min), 'Barcelona Zoo' (3 min), 'El Xampanyet' (6 min), 'El Vaso de Oro' (8 min), 'Can Paixano' (9 min), 'Vila Vinitica' (8 min), and 'El Corte Inglés' (15 min). At the bottom of the page, it states 'Based on 1,205,418 interactions by locals and travellers.' and 'Powered by TopPlace™'.

AVUXI

Products ▾ Demos ▾ Pricing Blog Contact

Free Trial Log In

Ciutadella Park, Passeig de Picasso, Barcelona, Spain

English

Ciutadella Park

📍 Superb location for Sightseeing!

9.8 Superb Sightseeing

7.5 Very good Eating

6.5 Good Shopping

7.2 Good Nightlife

Nearby top locations

🚶 1 min Parc de la Ciutadella

🚶 4 min Museu de la Xocolata

🚶 8 min Mercat de Santa Caterina

🚶 10 min L'Antic Teatre

🚶 3 min Barcelona Zoo

🚶 6 min El Xampanyet

🚶 8 min El Vaso de Oro

🚶 9 min Can Paixano

🚶 8 min Vila Vinitica

🚶 15 min El Corte Inglés

time / distance

Based on 1,205,418 interactions by locals and travellers.

Powered by TopPlace™

Modelo de Negocio

Starlab: (Greendex) Índice verde urbano

<https://greendex.es/>

The screenshot shows the Starlab Greendex website. The header features the Starlab logo (Living Science) and the Greendex logo. Navigation links for Home, How, Why, and Greenmaps are present. The main content area has an aerial view of a city street with the text "Check the Greendex of your house !". Below this is a search bar labeled "Enter your address" and a button labeled "Navigate through the Greenmaps". The bottom section displays the "Property Vegetation Rating" with a scale from G1 to G5, where G1 is the highest rating (darkest green) and G5 is the lowest (lightest green). To the right of the rating scale is the Greendex logo and a descriptive paragraph about the Green Index.

Starlab Living Science

GreenDEX

Home How Why Greenmaps

Check the Greendex of your house !

Enter your address

or

Navigate through the Greenmaps

Property Vegetation Rating

Very green surrounding area (%) – More healthy surrounding

G ₁	Very green surrounding area (%) – More healthy surrounding
G ₂	
G ₃	
G ₄	
G ₅	

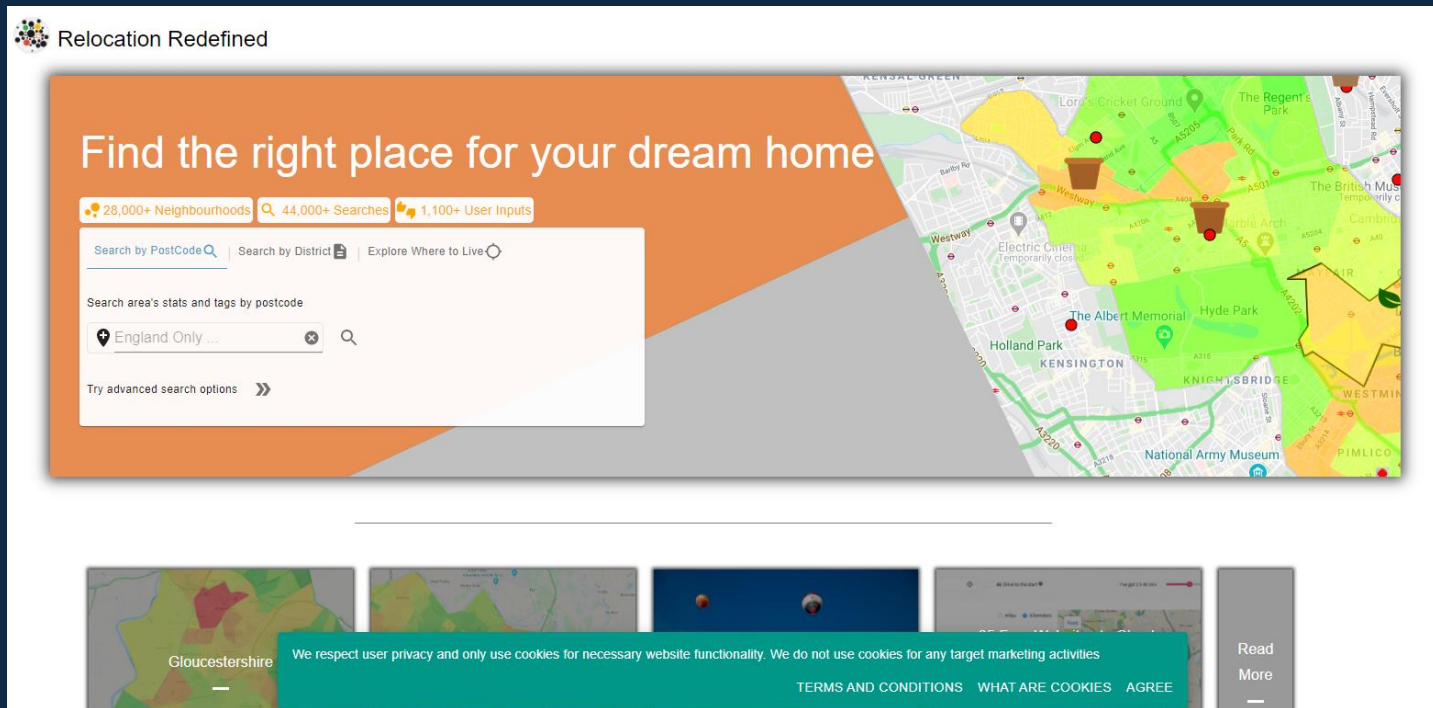
GreenDEX

The **Green Index** translates the vegetation observed from satellite data to an easily interpretable value (Gx), quantifying the vegetation present around your home. The higher the green intensity of the leaf, the healthier surrounding!

Modelo de Negocio

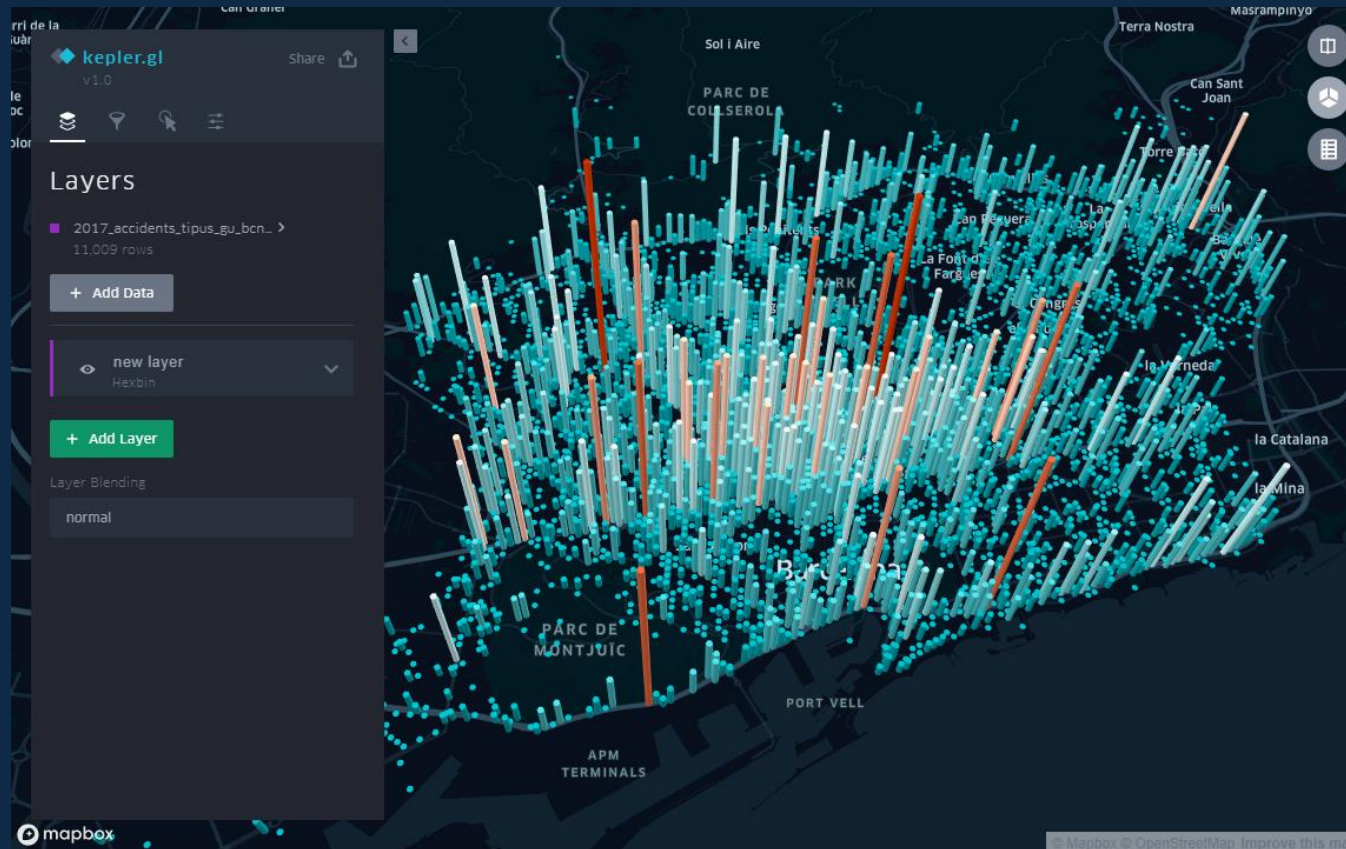
SmartPostCode: Sitios dónde vivir en UK según preferencias

<https://www.smartpostcode.co.uk/>



KeplerGL

Es una aplicación que nos permite trabajar con hexágonos



<https://kepler.gl/>