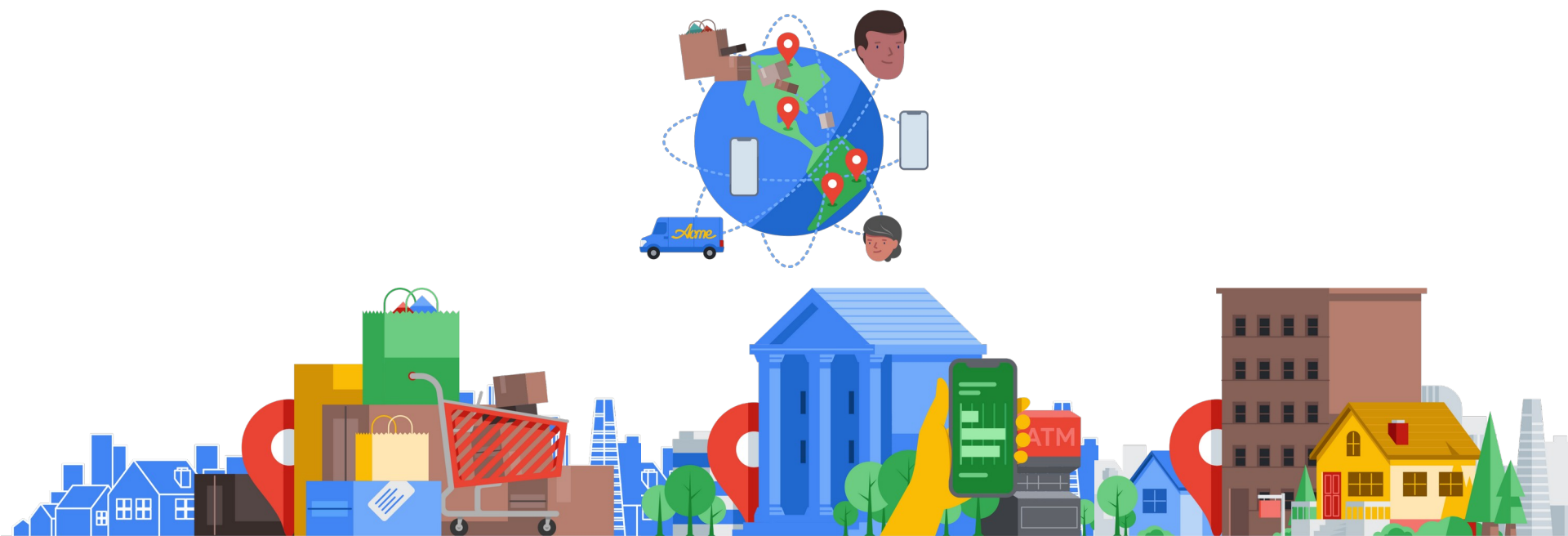




Date: 17 de octubre - **Location:** Santiago, Chile - **Coordinates:** (-33,4424643, -70,6547680)

IDE Chile: Construyendo un Ecosistema Digital Geoespacial



Google Maps

Detrás de los datos

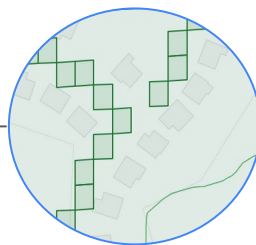
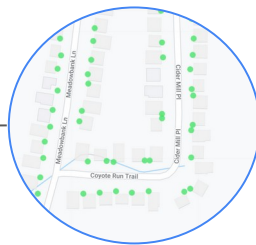


Martín Cabrera

Head of Customer Engineering
Google Cloud

martincabrera@google.com

¿Qué hay detrás de los datos en Google Maps?

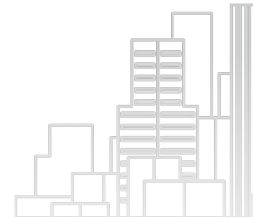


Datos Cartográficos

- Direcciones georeferenciadas
- Puntos de Interés (POI)
- Calles
- Rutas
- ...

Metadatos (ejemplo: calle)

- Límite de velocidad
- Accesible a ciclistas
- Tipo de cubierta
- Identificadores
- Horarios de tráfico
- Sentido
- Numeración
- ...



¿De dónde vienen los datos de Google Maps?

Licenciamiento

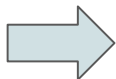
Open Data

Crowdsourcing

In-House Data

MODELOS TRADICIONALES

Contenido
Sintético

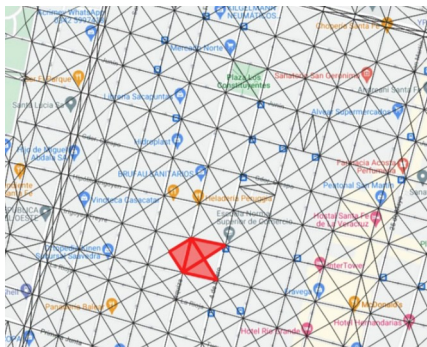


***INTELIGENCIA
ARTIFICIAL***

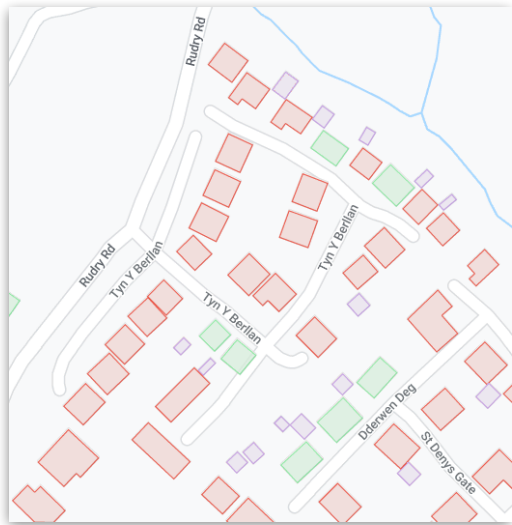
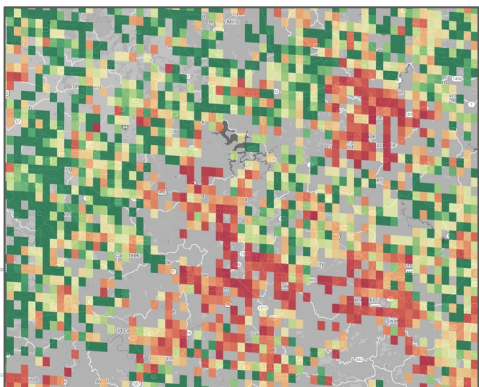
NUEVOS MODELOS

¿Inteligencia Artificial sobre los mapas?

¿Cómo funcionan los datos sintéticos?



Polígonos Sintéticos
(Transformación de Voronoi)



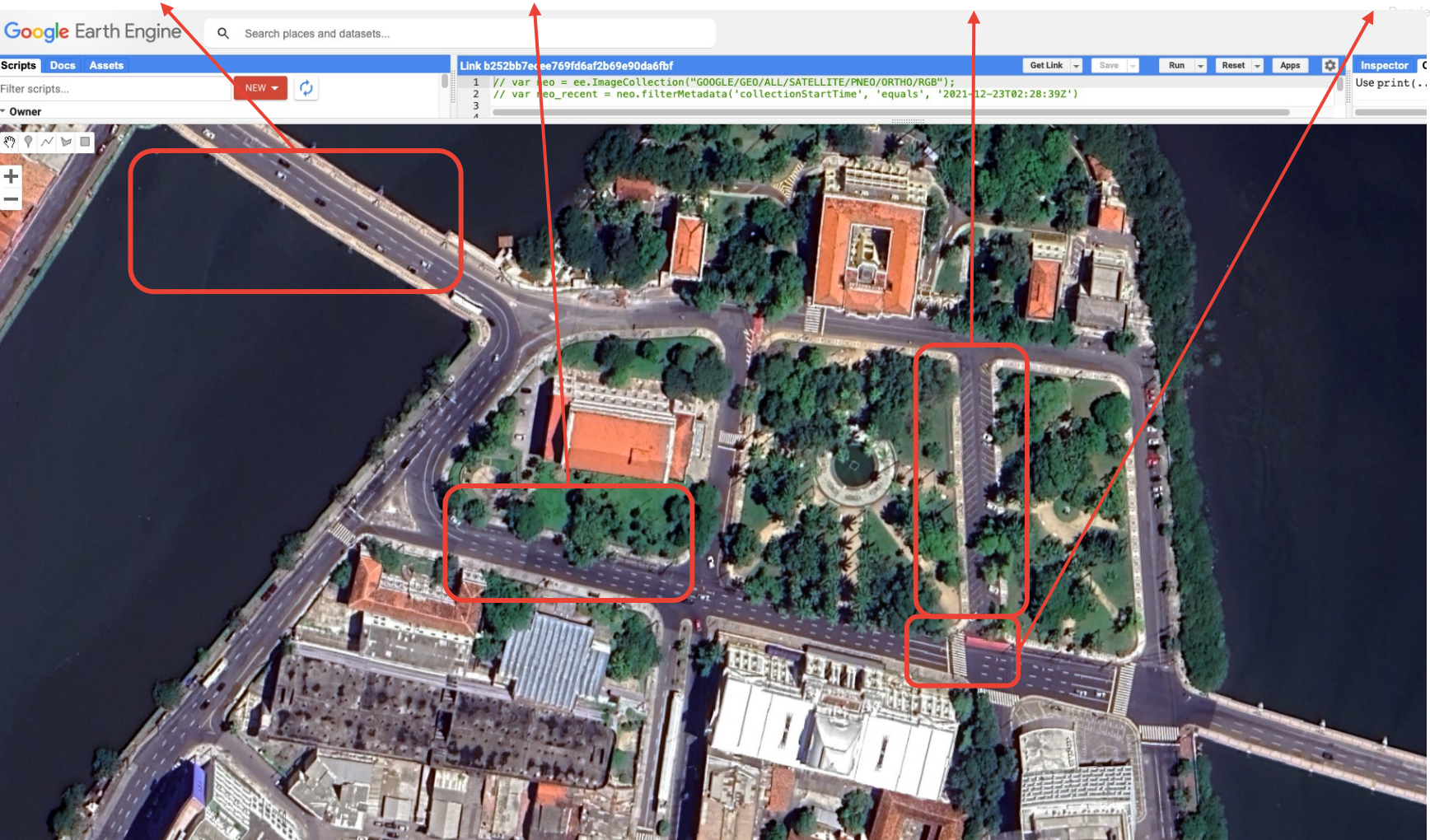
Inteligencia Artificial
(Machine Learning)

Car congestion

How many lanes in a road?

Is there a parking nearby?

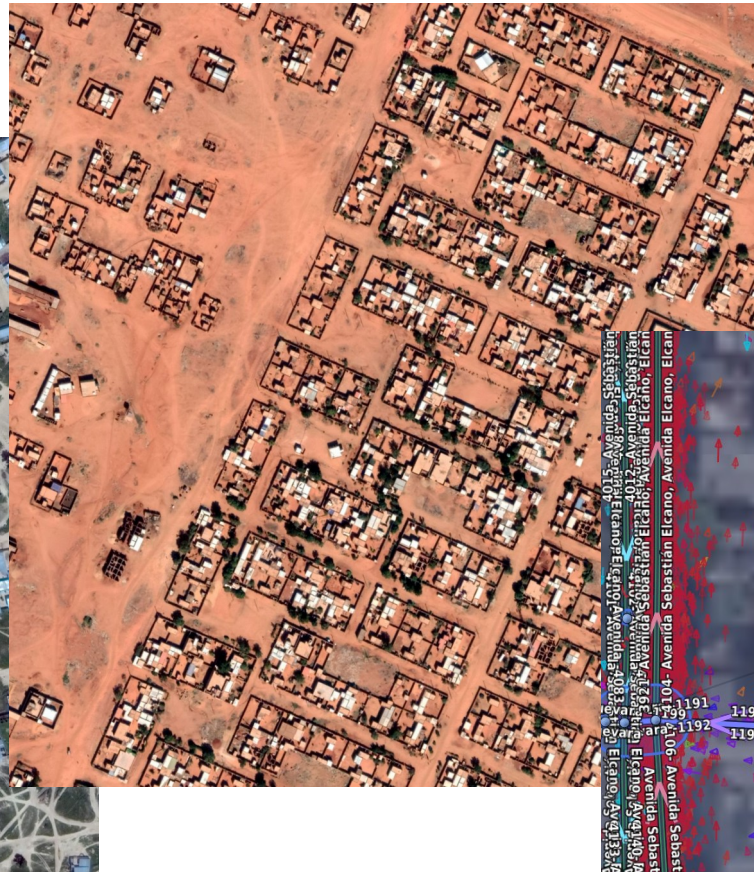
Where should pedestrians cross?



Algoritmos (detección de calles)

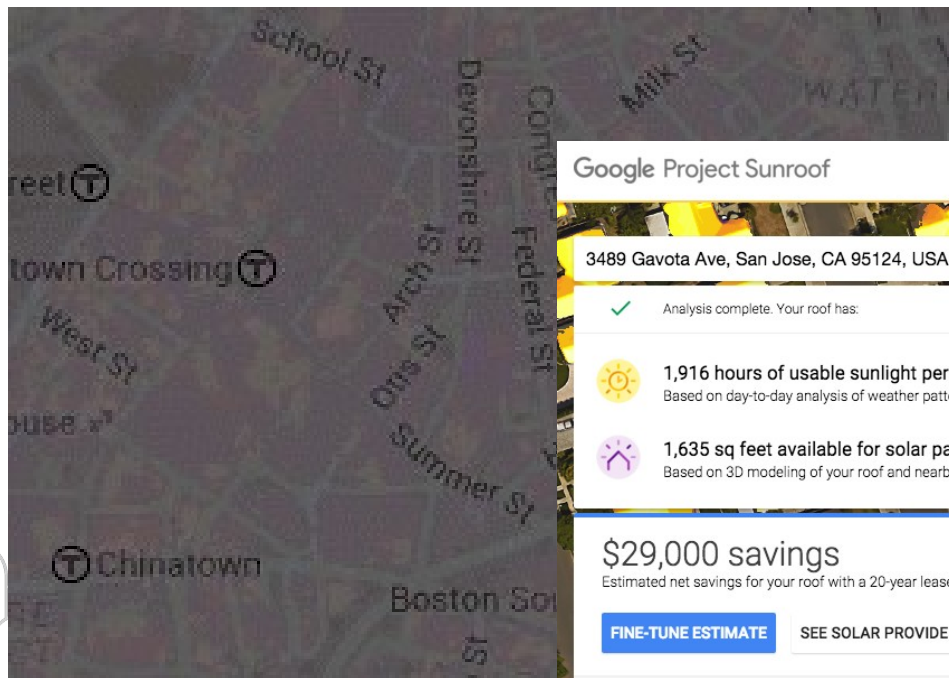


Pero los algoritmos sufren con ciertos escenarios...



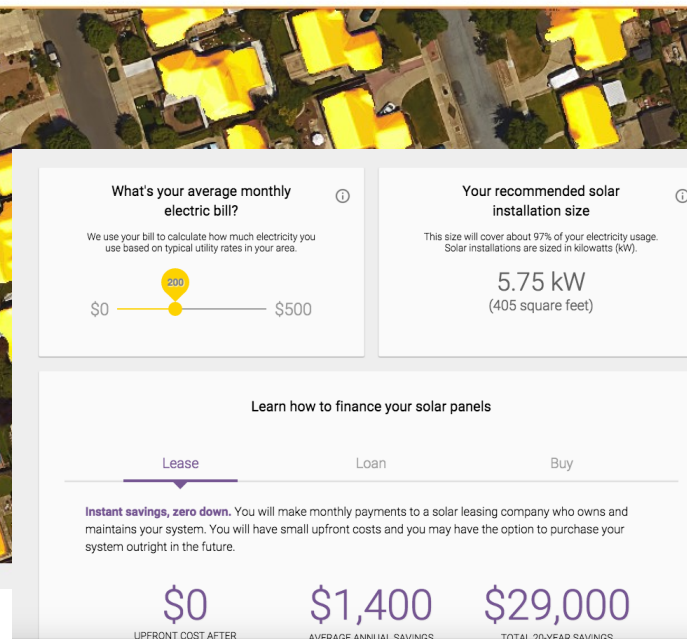
Casos de Éxito con AI/ML

Project Sunroof



1h de energía solar sobre la tierra

⇒ total del consumo eléctrico del planeta en 1 año



1B

people **depend**
on fish for
primary source
of protein

90%

of apex
species have
disappeared
in our
lifetime

85%

of global
fisheries are
overfished,
at capacity,
or **recovering**

1 in

fish are IUU
Illegal,
Unreported, or
Undocumented

5



38%

of fish is
traded
international

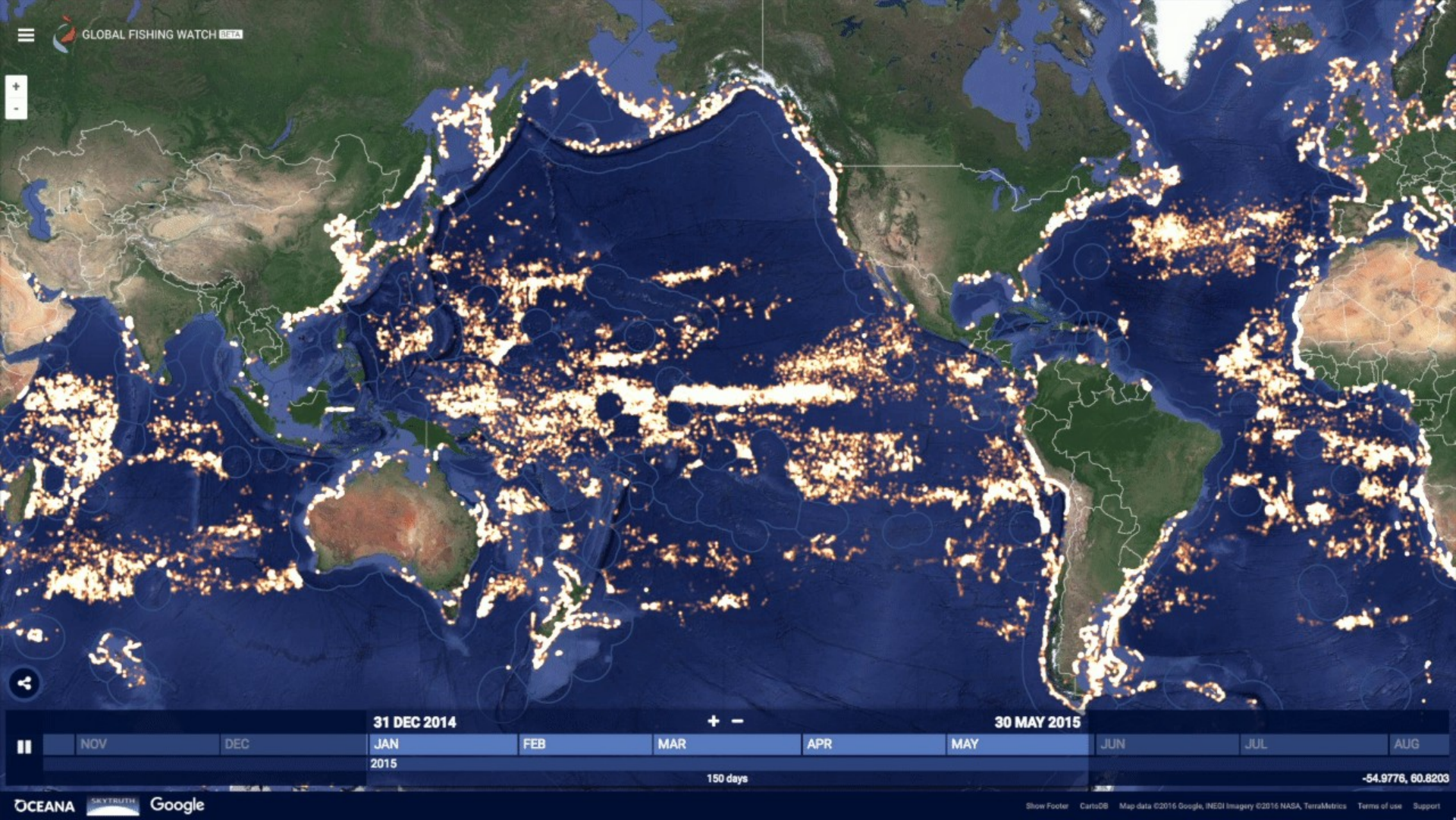
55%

comes from
developing
countries

\$60

world export
value of fish

B



31 DEC 2014

+ -

30 MAY 2015



NOV

DEC

JAN

FEB

MAR

APR

MAY

JUN

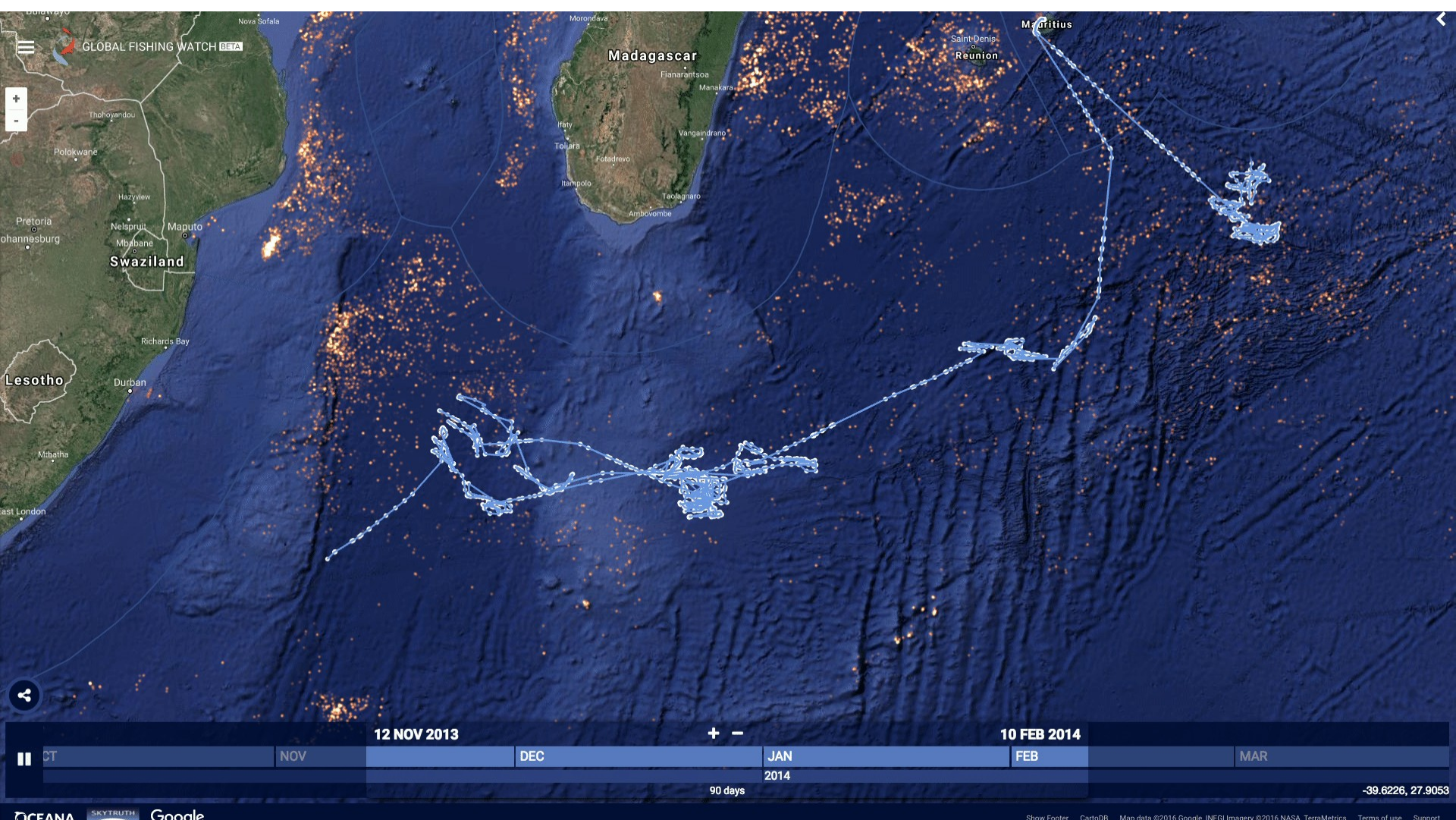
JUL

AUG

2015

150 days

-54.9776, 60.8203



GLOBAL FISHING WATCH BETA

Madagascar

Reunion
Saint-Denis

Swaziland

Lesotho

12 NOV 2013

+ -

10 FEB 2014

||

CT

NOV

DEC

JAN

FEB

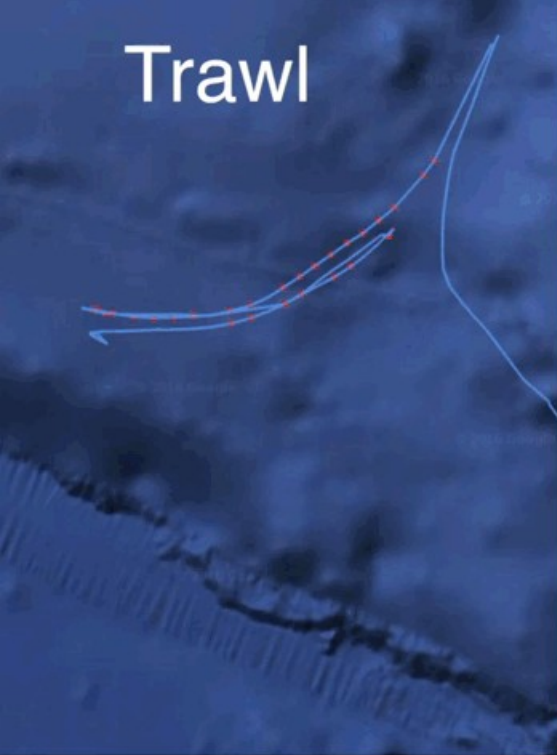
MAR

2014

90 days

-39.6226, 27.9053

Trawl



Longline



Purse Seine



1984

Manejo Sustentable de Areas Forestales

Deforestation in the Amazon

1984 - 2018



Crecimiento Urbano y Manejo de Recursos Hídricos

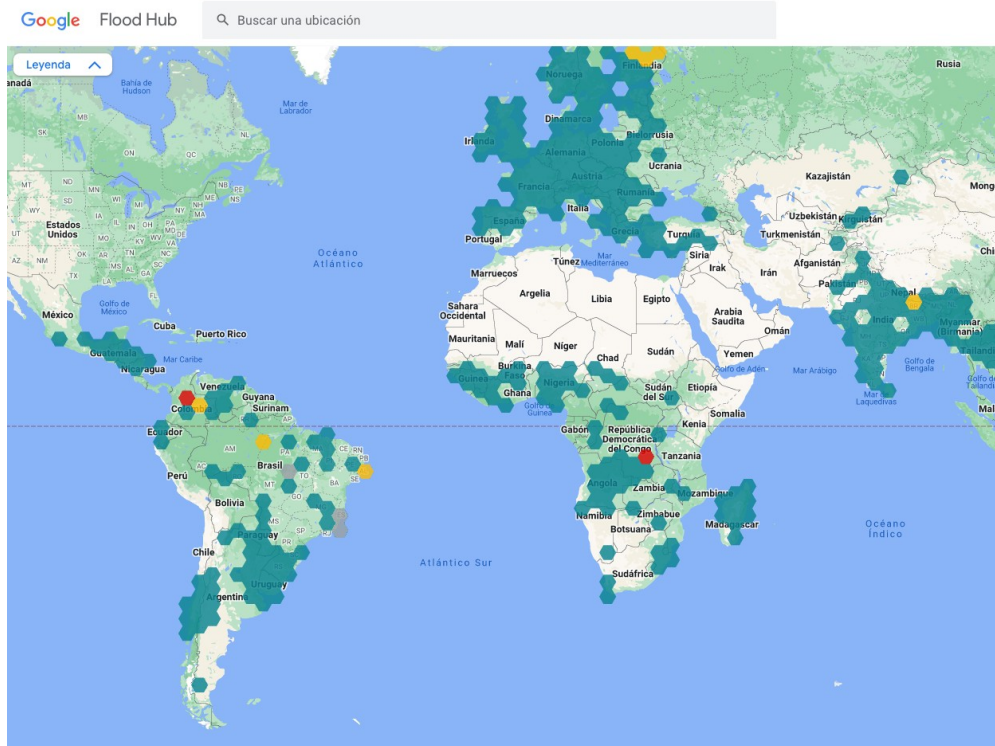
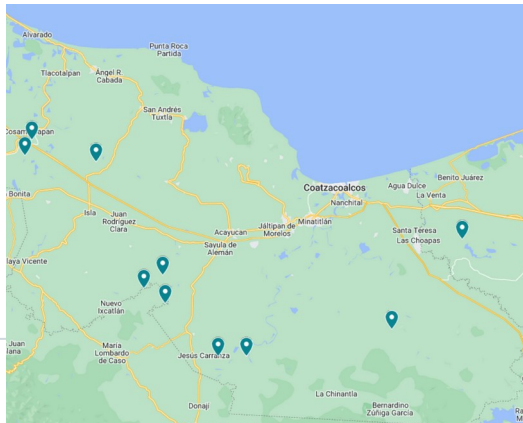
1984

0%

Surface Water
% Change



Flood Forecasting



OpenBuildings en LatAm

¿Es el catastro suficiente para ubicar a todos?



Algoritmos (detección de construcciones con ML)



<https://sites.research.google/open-buildings/>

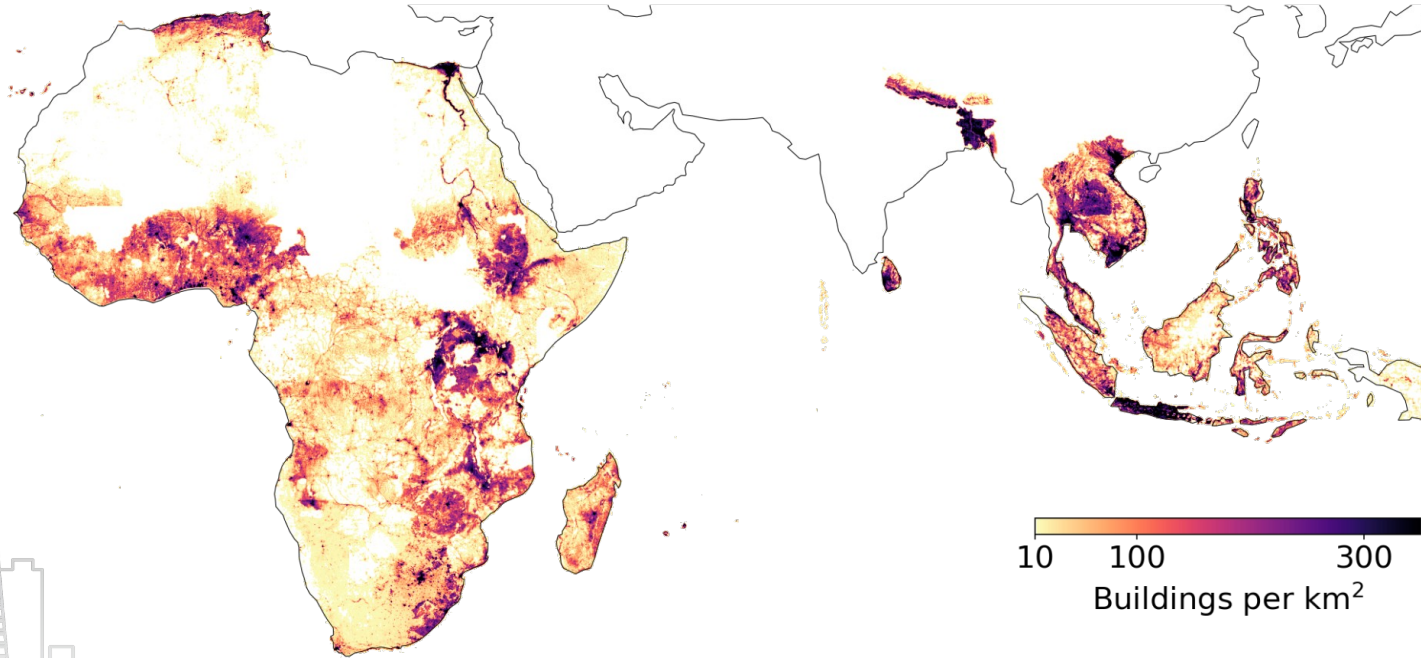
Open Buildings

A dataset of building footprints to support social good applications.

Building footprints are useful for a range of important applications, from population estimation, urban planning and humanitarian response, to environmental and climate science. This large-scale open dataset contains the outlines of buildings derived from high-resolution satellite imagery in order to support these types of uses. The project is based in Ghana, with an initial focus on the continent of Africa and new updates on South Asia and South-East Asia.

[Explore](#)[FAQ](#)[Data format](#)[Download](#)

800M de estructuras detectadas...



Plus Codes

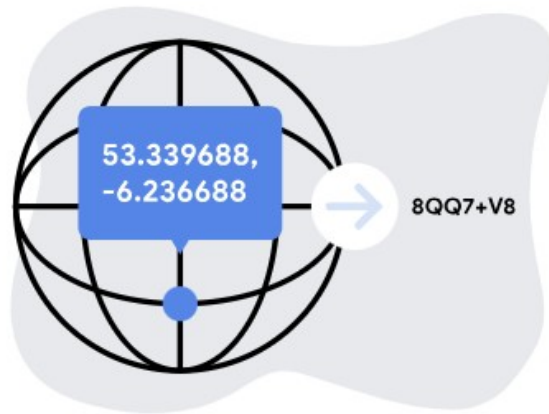
I live here



Plus Codes (maps.google.com/pluscodes)

2B de personas no tienen una dirección

- ¿Cómo llamas a una ambulancia?
- ¿Cómo registras a tus hijos en una escuela?
- ¿Cómo sacas una credencial de elector?
- ¿Cómo pides un paquete a tu casa?
- ¿Cómo te vacunas o accedes a la salud?



5k
m

260m

13m

97 HF + MX
São Paulo,
SP



97HF+MX

São Paulo, SP



Rotas



Salvar



Próximo



Enviar para
smartphone



Compartilhar



R. Itamotinga - Vila Andrade, São Paulo - SP



97HF+MX São Paulo, SP



Adicionar um lugar que está faltando

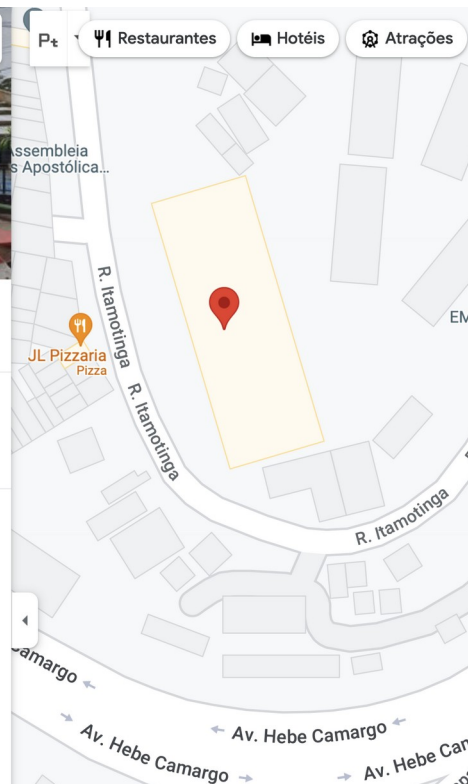


Adicione sua empresa



Adicionar marcador

Fotos



Gratuitos, open source y disponibles en Google Maps

¿Qué son los plus codes?

Plus codes son una solución digital al problema de direccionamiento creados por Google

Son equivalente y complemento a direcciones postales tradicionales

Existen para cualquier ubicación aunque no tengan calles ni caminos.

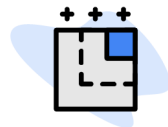
Proveen información hasta una precisión de 3x3 metros en cualquier lugar del mundo de forma inequívoca



Open Source



Códigos Cortos / Simples
y Agnósticos al Lenguaje



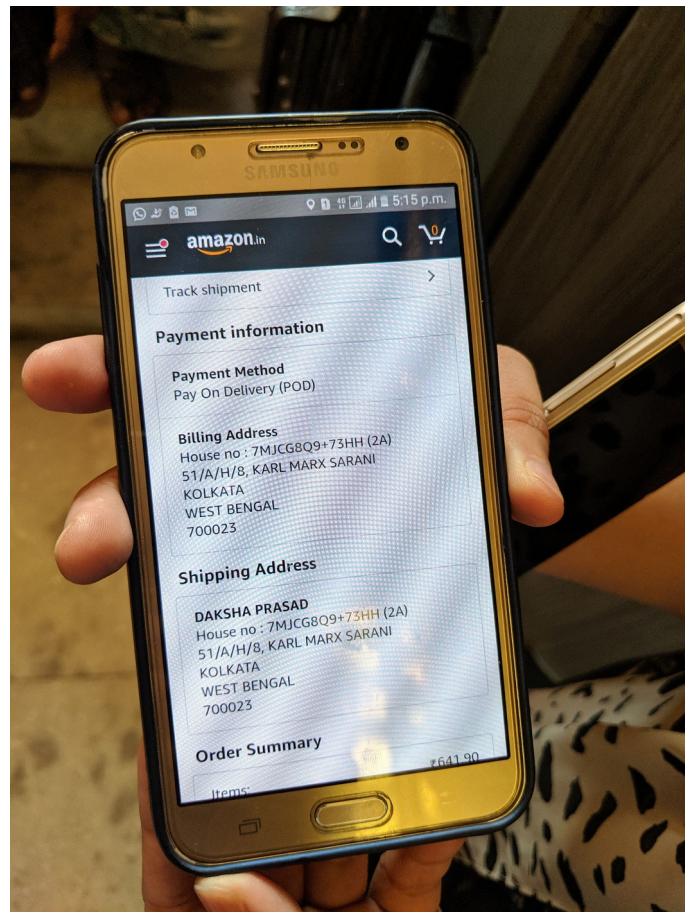
Versátil y ya implementado
en Google Maps y otras
plataformas tecnológicas



Accesible Offline y fácil
de compartir



***“La necesidad
es la madre de
todas las
invenciones”***



Google Maps Content Partners

contentpartners.maps.google.com

Who we partner with

We partner with organizations who have authoritative geospatial data for their region. Authoritative means your organization:

- Is trusted by users to know what does and doesn't exist locally
- Has high quality geospatial data
- Has the rights to share that data

Example partners include:



Local, regional, and national authorities

- Municipalities
- Transportation, tourism, and other agencies
- State / National mapping agencies
- Indigenous and Aboriginal authorities



Housing developers



Healthcare providers, agencies, and NGOs



Organizations using Google's maps and APIs



Other trusted public, private or non-profit organizations (e.g., universities)

Google Maps

Detrás de los datos



Martín Cabrera

Head of Customer Engineering
Google Cloud

martincabrera@google.com



A word cloud featuring the word "THANK YOU" in large, bold, black capital letters. Surrounding it are various translations of "Thank You" in different languages, including: GRACIAS, ARIGATO, SHUKURIA, GOZAIMASHITA, EFCHARISTO, JUSPAXAR, DANKSCHEEN, TASHAKKUR ATU, YAQHANYELAY, SUKSAMA, EKHMET, MEHRBANI, PALDIES, BOLZİN, MERCI, BİYAN, SHUKRIA, TINGKI, and many others. The words are arranged in a circular pattern around the central "THANK YOU" text.



Google Maps Platform