



Cloud Native Spatial Analysis with CARTO: Exploring the Impacts of Climate Change on Insurable Assets

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Introductions



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Agenda



Intro to cloud native CARTO

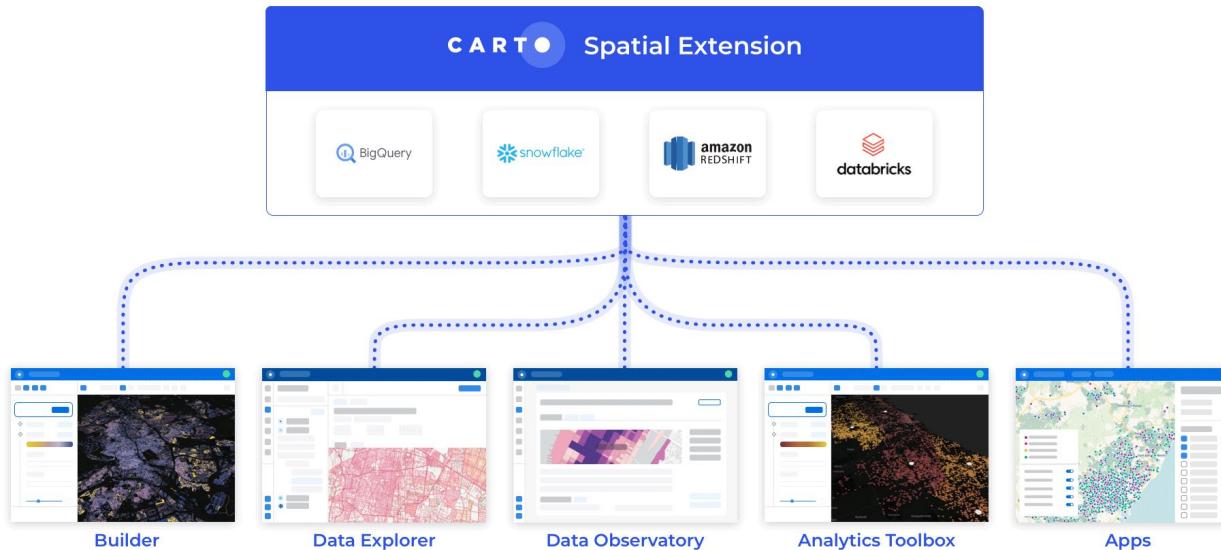
Intro to the Analytics Toolbox and Workflows

Use case: Impacts of Climate Change on Insurable Assets

Questions and Answers

The new cloud native CARTO

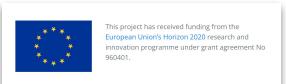
CARTO now brings together cloud connectivity, visualization, spatial analysis and development capabilities in a unified workspace.



Analytics Toolbox

Overview

- Set of UDFs and Stored Procedures that unlock advanced Spatial Analytics **natively** within the data warehouses.
- Executed directly from your client, using **simple SQL** commands.
- Separated in **different levels** of abstraction, with core, advanced and domain specific functions (e.g. retail).



The screenshot displays the 'Analytics Toolbox' interface. It is organized into three main sections:

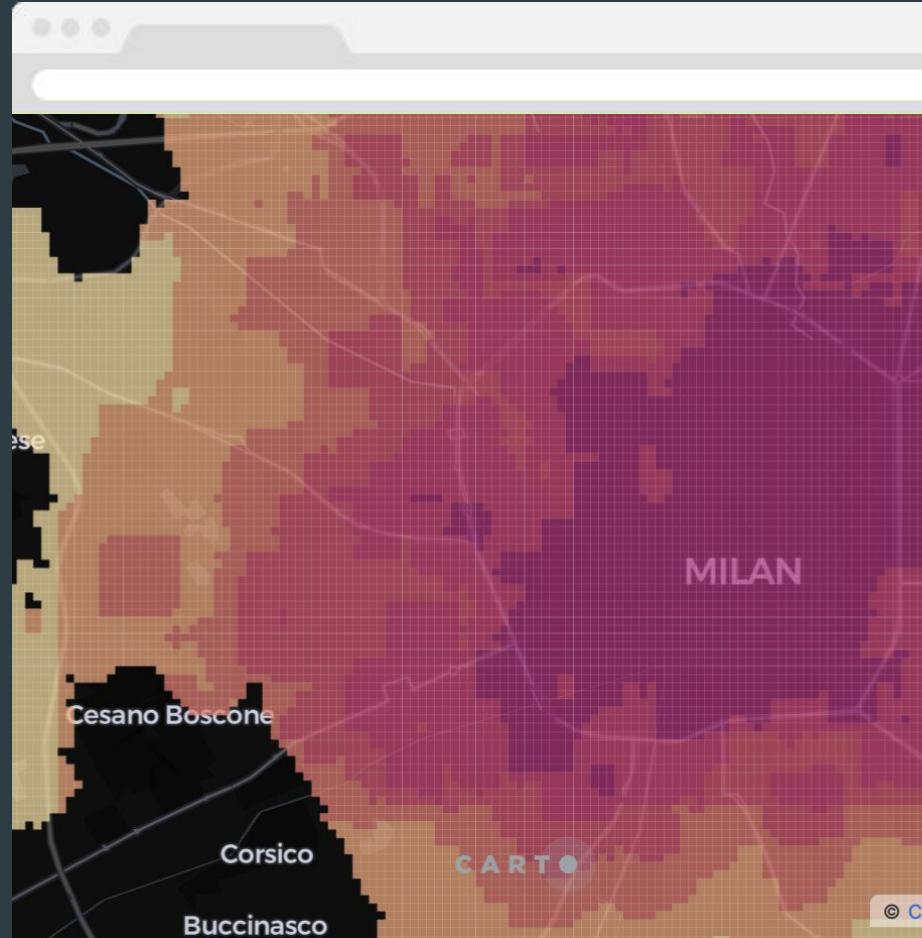
- Domain-specific:** Contains a 'Retail' icon and a 'Coming soon' placeholder for 'Logistics'.
- Advanced:** Contains icons for Tiler, Data, Clustering, Random, Routing, Geocoding, and Statistics.
- Core:** Contains icons for Transformations, Processing, Measurements, Placekey, Constructors, Accessors, H3, Quadkey, S2, and Geohash.

At the bottom of the interface, there is a footer bar with the 'BigQuery GIS' logo.

CREATE A COMPOSITE SCORE

Combine (spatial) variables into a meaningful composite indicator

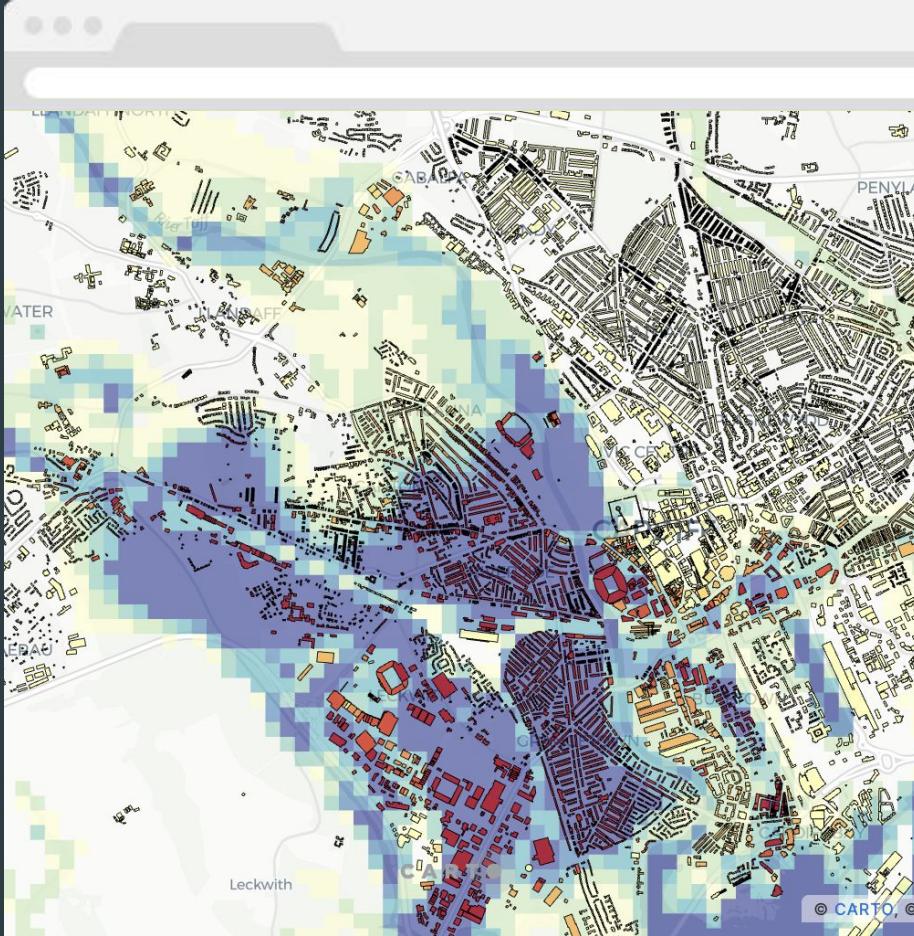
→ [Documentation](#)



LOAD RASTER DATA

Access and operate with raster data loaded into BigQuery with our Raster Loader

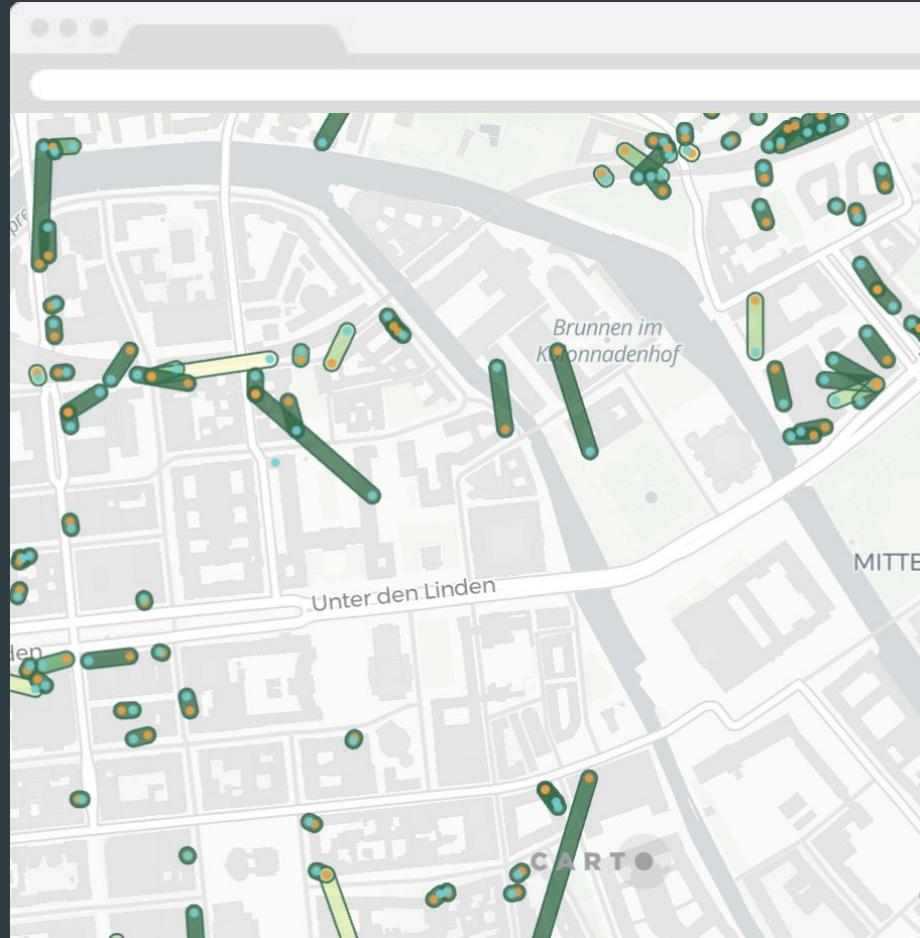
→ [Documentation](#)



UNIVERSE MATCHING

Perform a text-and-distance hybrid,
fuzzy match between two CPG
universes

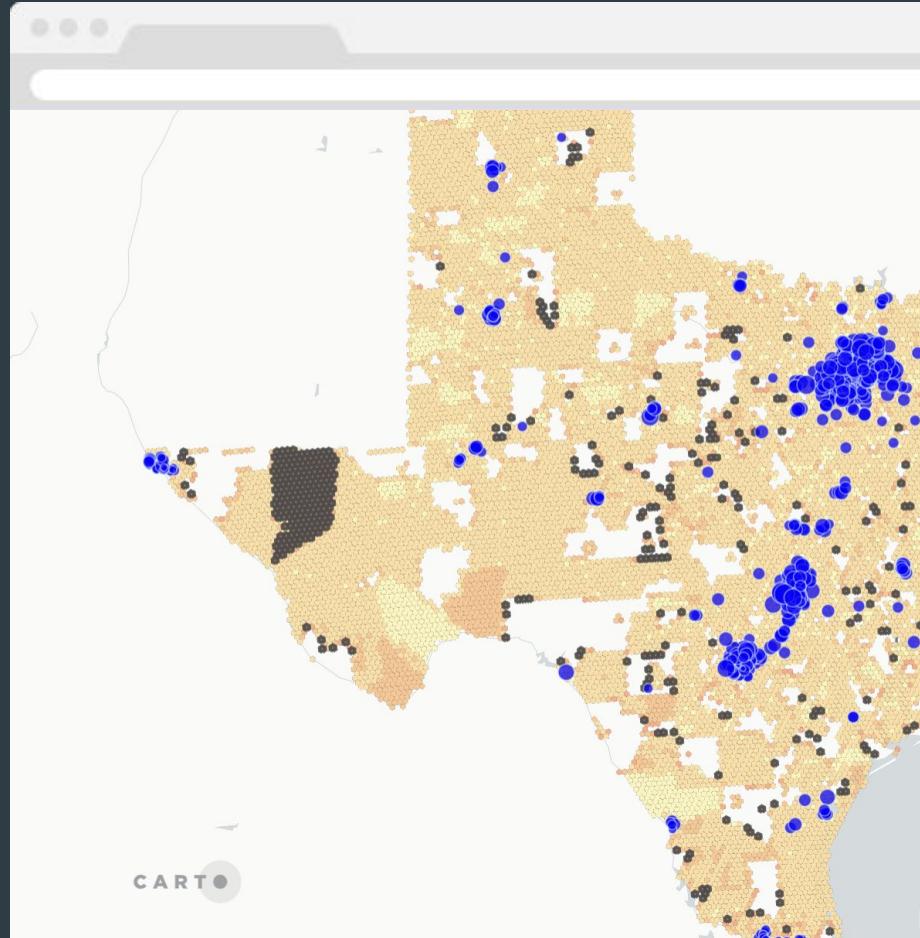
→ [Documentation](#)



AREA OF APPLICABILITY

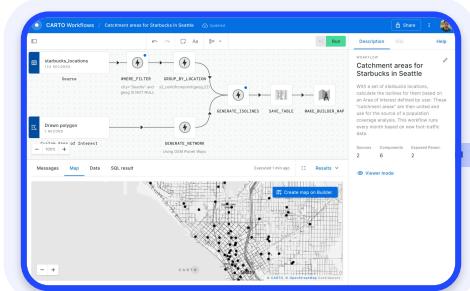
Computes the Area of Applicability of a ML model, where the results can be trusted outside the model training space

→ [Documentation](#)



Workflows

A new UI to design Spatial SQL workflows

A screenshot of the generated SQL code. The code is a complex multi-line query using spatial functions like ST_GEOPOINT and ST_BUFFER. It starts with an options clause, followed by a select statement from a BigQuery table, and ends with a create or replace table clause. The code is presented in a light blue box with red highlights around specific parts of the query.

User designs workflows in CARTO

Workflows are compiled into SQL

Workflow are executed on
your data warehouse

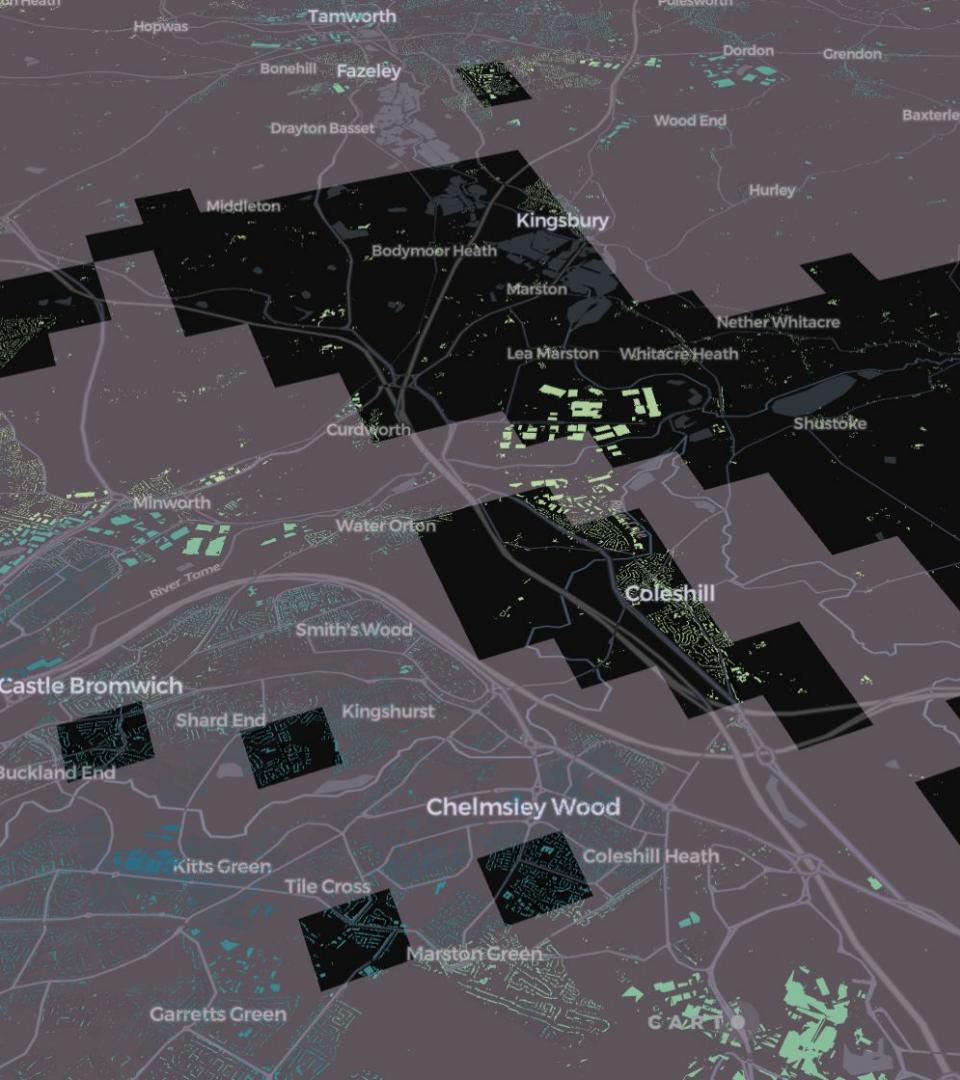


Use case: Impacts of Climate Change on Insurable Assets

- Create a composite score to measure the risk of extreme climate events for two major coffee shop brands
- Estimate the change in energy consumption by building under climate change and assess where the model prediction can be trusted



the
climate
datafactory



<https://bit.ly/3M4Yb21>



**It's time for a real
world example!**

Thanks for listening! Any questions?

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