

# Hi, I'm Jie-Ting Jiang

I am a Senior Frontend Engineer specializing in creating intuitive, data-driven apps with advanced visualizations. I am passionate about empowering users through seamless interactions and cutting-edge design.

# About Me

With 5+ years of experience, I excel at building intuitive and visual applications that empower users through seamless interaction and advanced visualizations. My mission is to unlock user's potential and creativity by minimizing complexity and maximizing user experience.

## Experience

Senior Business Intelligence Engineer  
Gogoro Inc. (2024/07 - Present)

Business Intelligence Engineer  
Gogoro Inc. (2022/10 - 2024/06)

Data Visualization Engineer  
Gogoro Network (2019/03 - 2022/09)

## Skills

Frontend Development  
React, Svelte, Styled components, Storybook, D3.js, Three.js, Deck.gl, Google Maps JS API

Backend Development  
Python, Django, DRF, Django ninja, Node.js, Express.js, Nginx, SQL

DevOps  
GitLab CI, Docker, Kubernetes

## Education

MSc in Informatics  
Johannes Kepler Universität Linz (2015 - 2017)

MBA in Information Management  
National Sun Yat-Sen University (2014 - 2018)

BSc in Computer Science  
National Sun Yat-Sen University (2010 - 2014)



# Data Universe

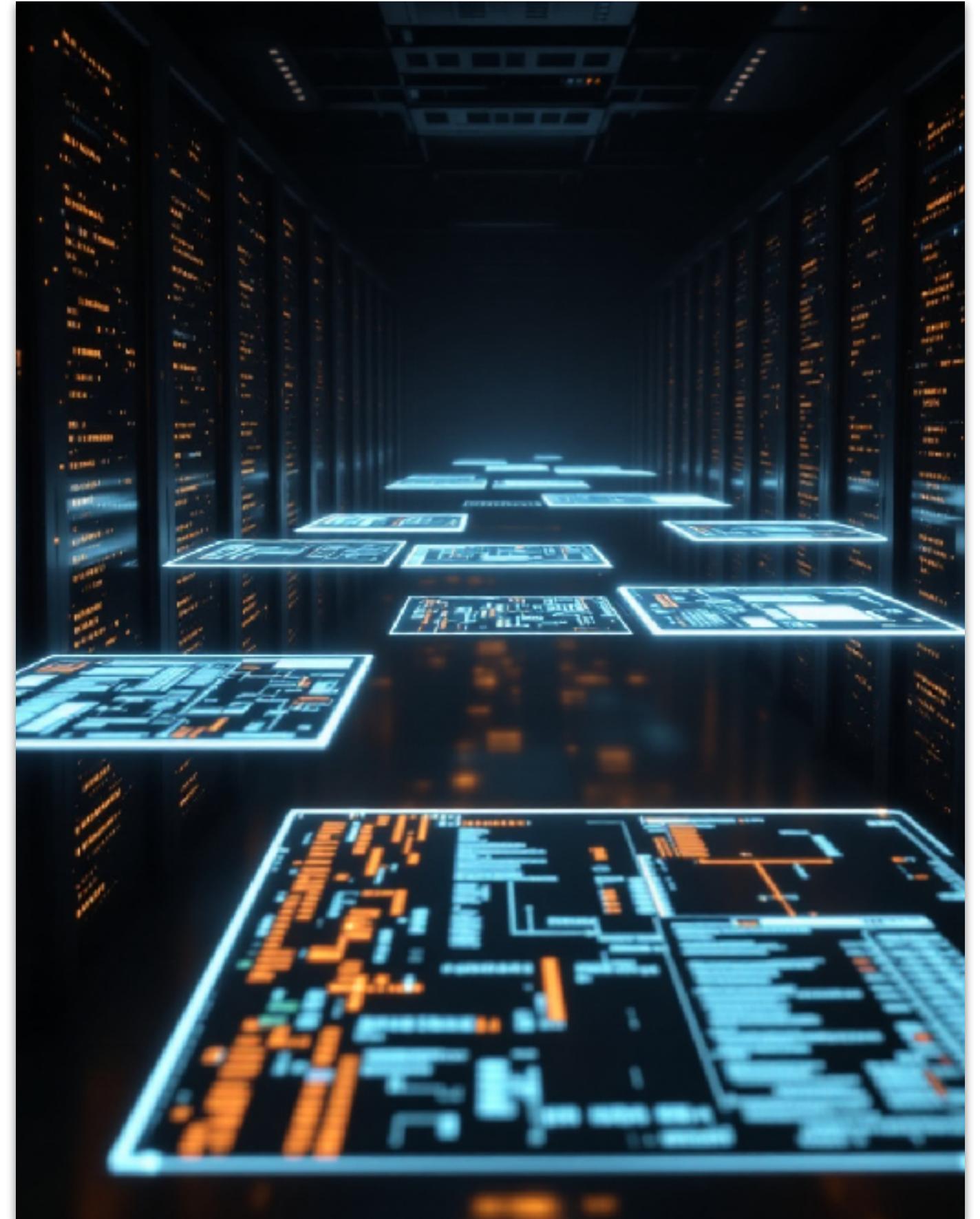
# 01 #frontend Data Universe

## Background

- We know data is big, but how big is it?
- Let decision-makers actually “feel” data can enhance decision quality
- Existing tabular and chart presentations are too rational

## Target

- Visualize big dataset (> 500,000 records) in browser from macro to micro
- Empower decision-makers to see and manipulate data directly
- An artistic approach that invites user to immerse in to explore & enjoy



# 01 #frontend Data Universe

## Idea Development

- Inspired by gaming experience
- Plot data (stars) into a 3D space (universe)
- Beyond 3 dimensions
  - Coordinate similarity
  - Speed / direction of revolution / rotation
  - Surface pattern
  - Color / luminance
  - Number of satellites

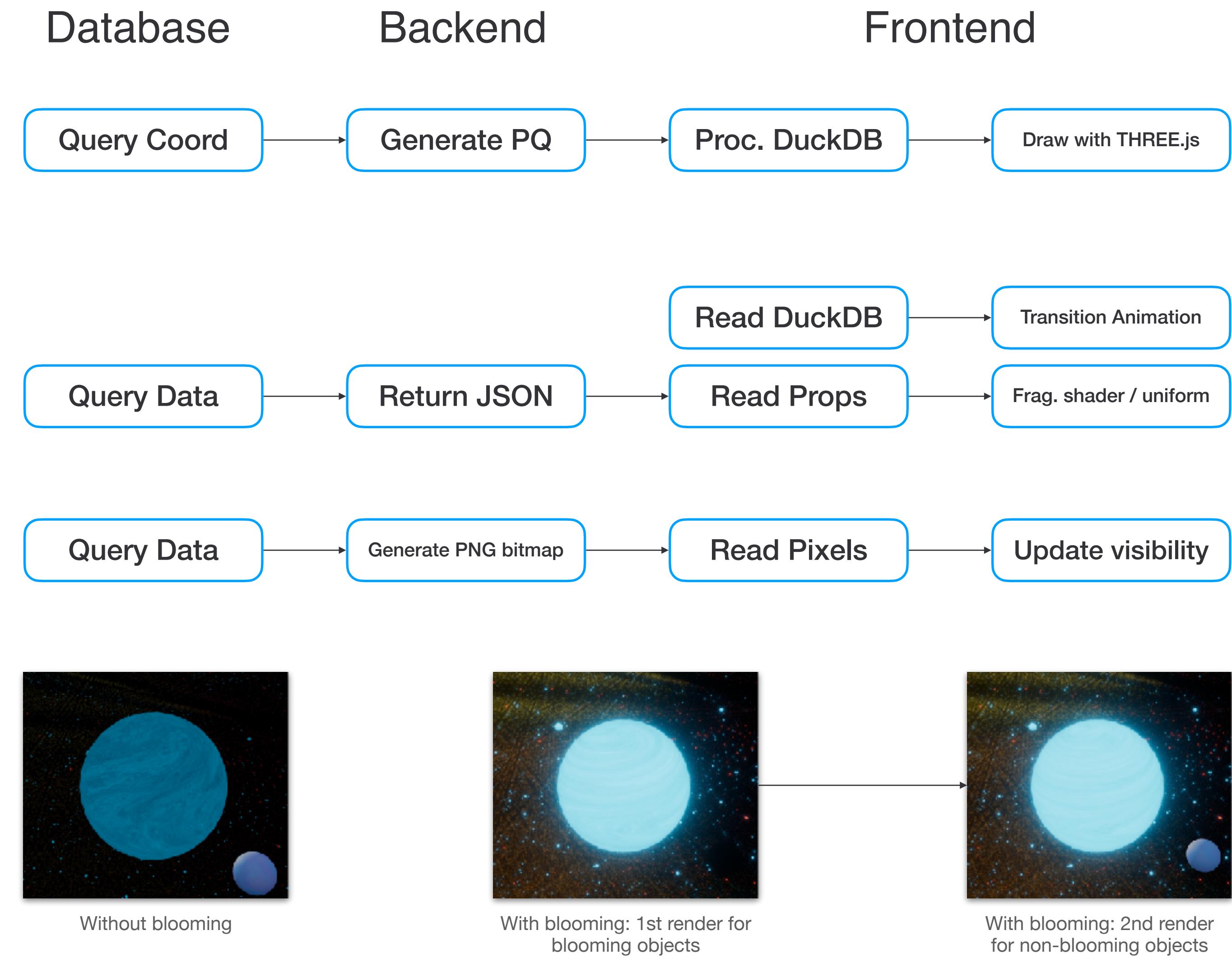


Inspiration - Mass Effect 2 by BioWare

# 01 #frontend Data Universe

## Realization

- Plotting dataset into a 3D space
  - Parquet + DuckDB WASM
  - Three.js
- Detail retrieval / Dynamic patterns
  - DuckDB, API, Shaders with GLSL
- Filtering
  - Bitmap indexing + PNG
- Post effects
  - Selective Blooming

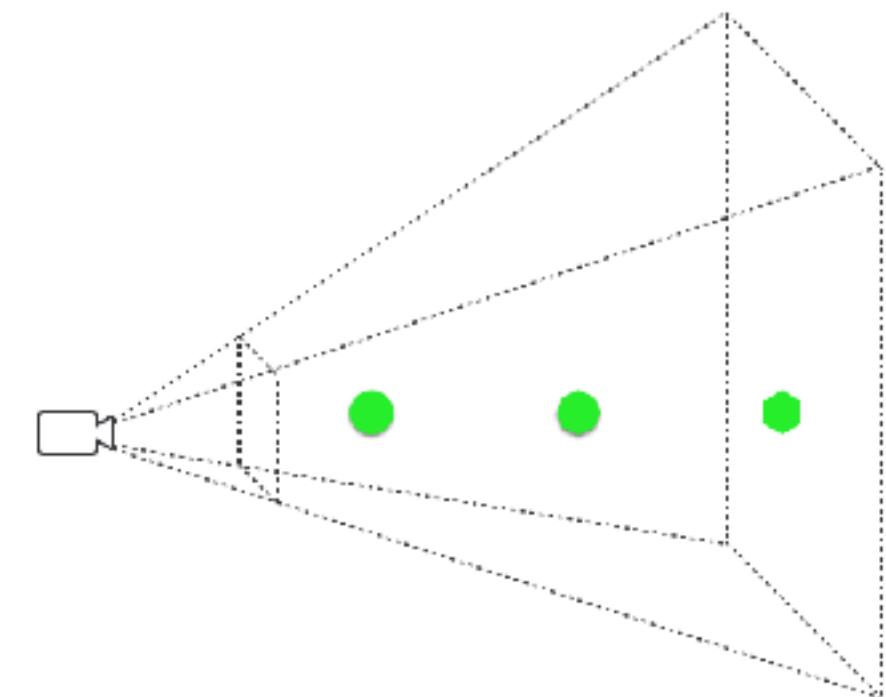


# 01 #frontend

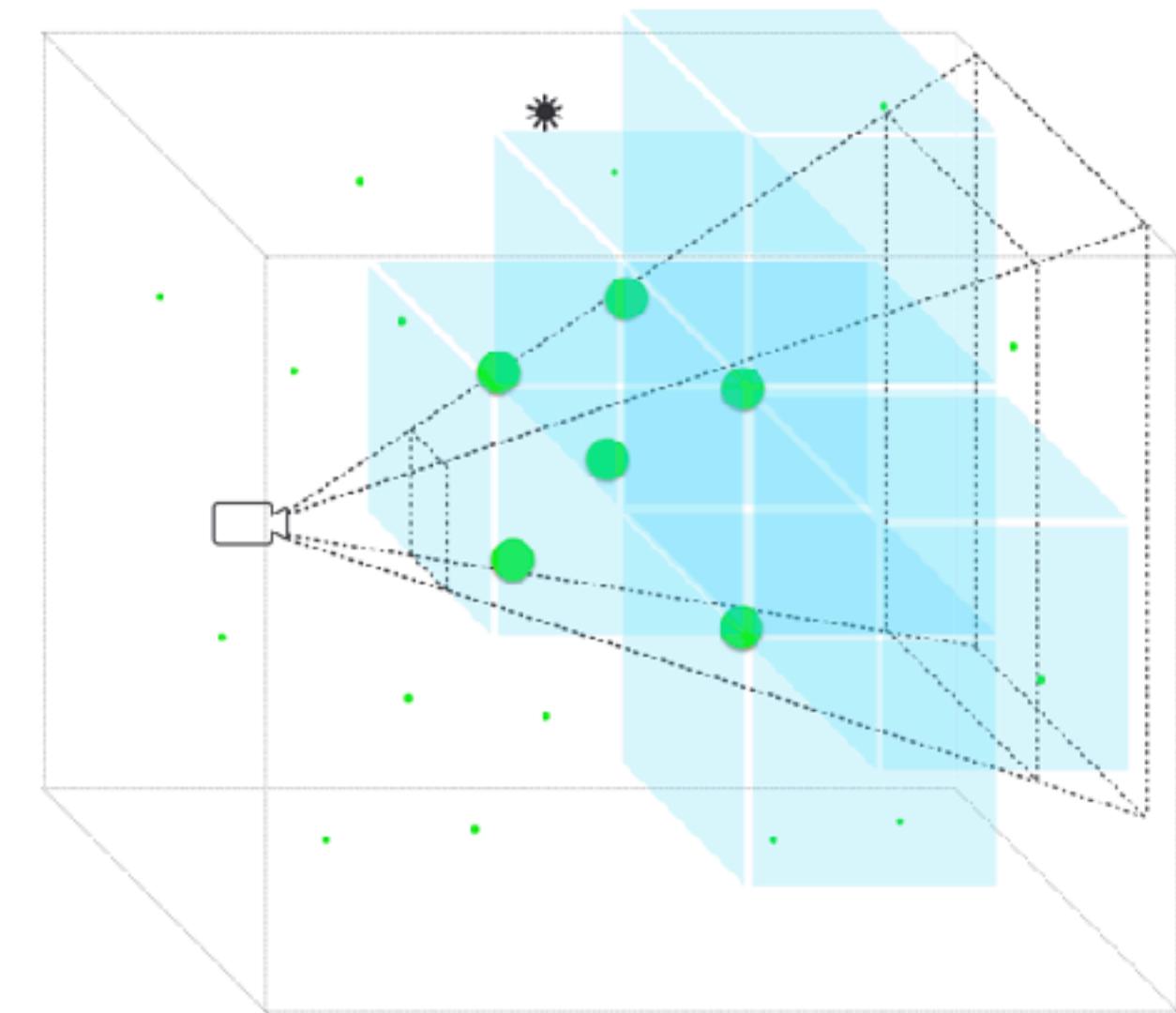
## Data Universe

### Optimization

- Include only necessary columns in the parquet for rendering the scene
- Levels of Detail (LOD)
- Octree
- Instanced Mesh
- Point Mesh



Levels of Detail



Octree

# 01 #frontend

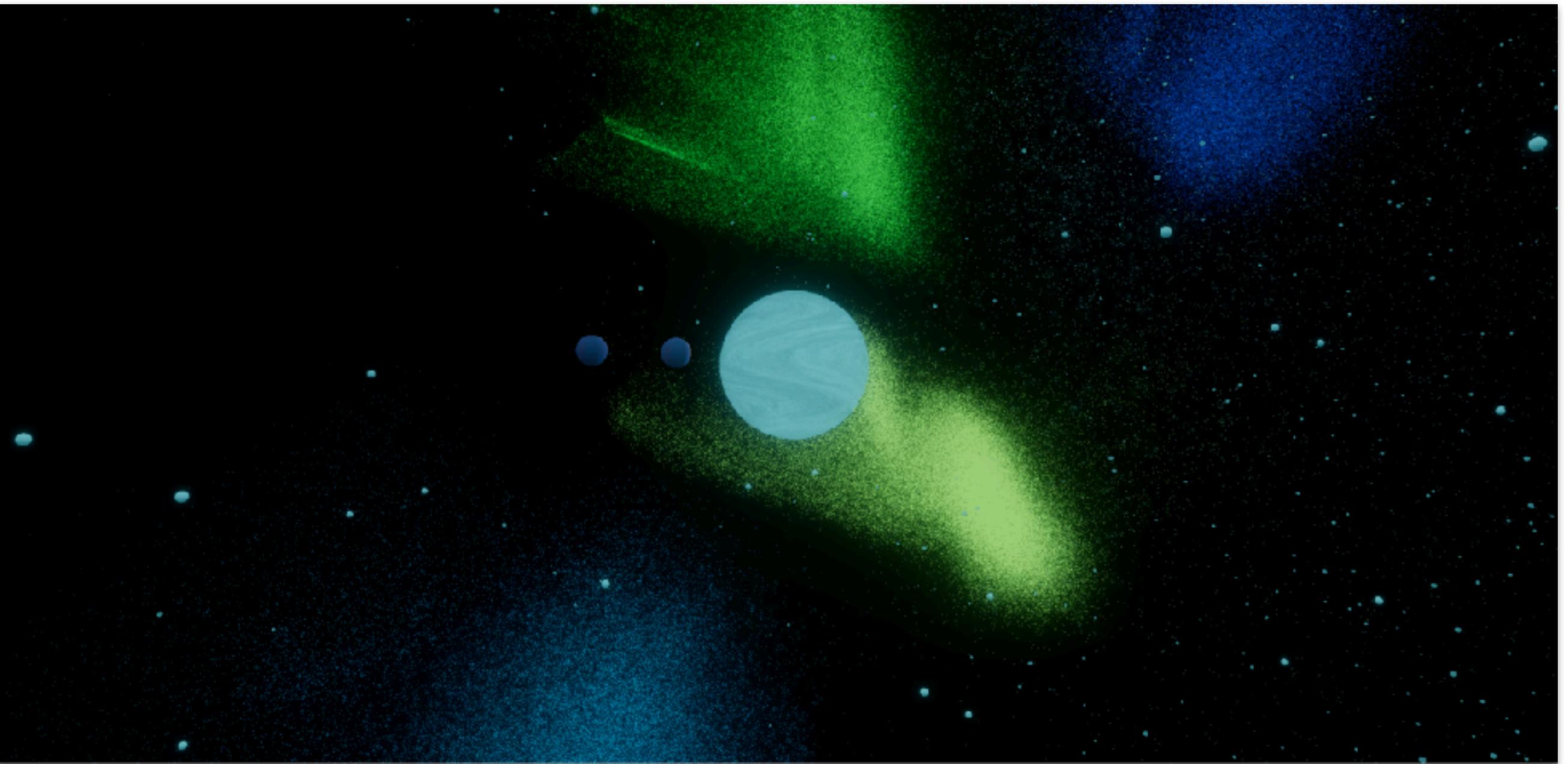
## Data Universe

### Technology Stack

- Svelte, D3, Three.js, GLSL
- DuckDB, Django, Django ninja, Pandas, Numpy
- PostgreSQL

### Result

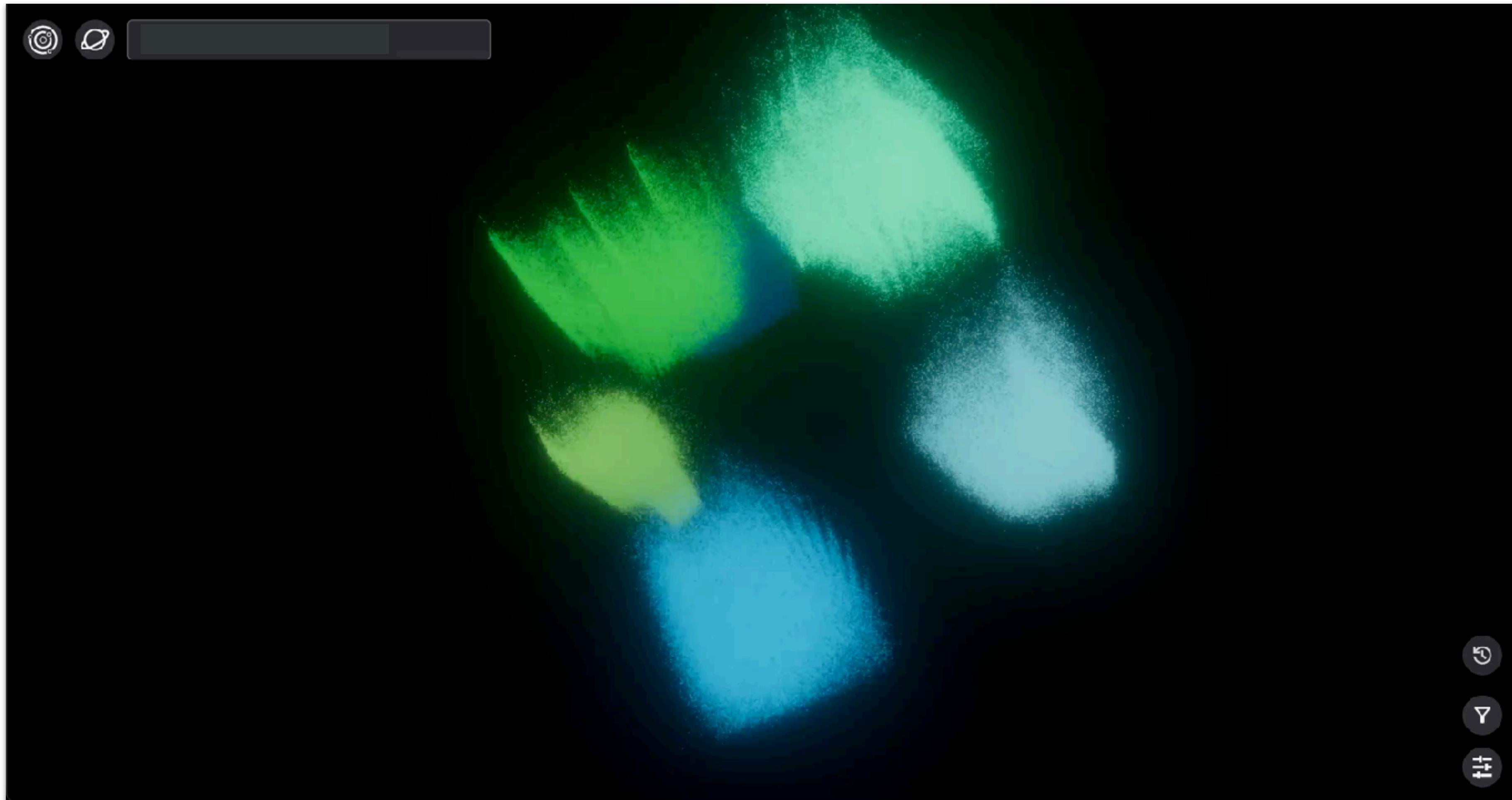
- Visualized over 1 million data records in a 3D space
- Enabling decision-makers to dive into datasets in real time with ease
- The interactive design runs efficiently on standard computers
- Inspires [Escaping Flatland](#), a side project leverages on similar approaches



Data Universe

# 01 #frontend

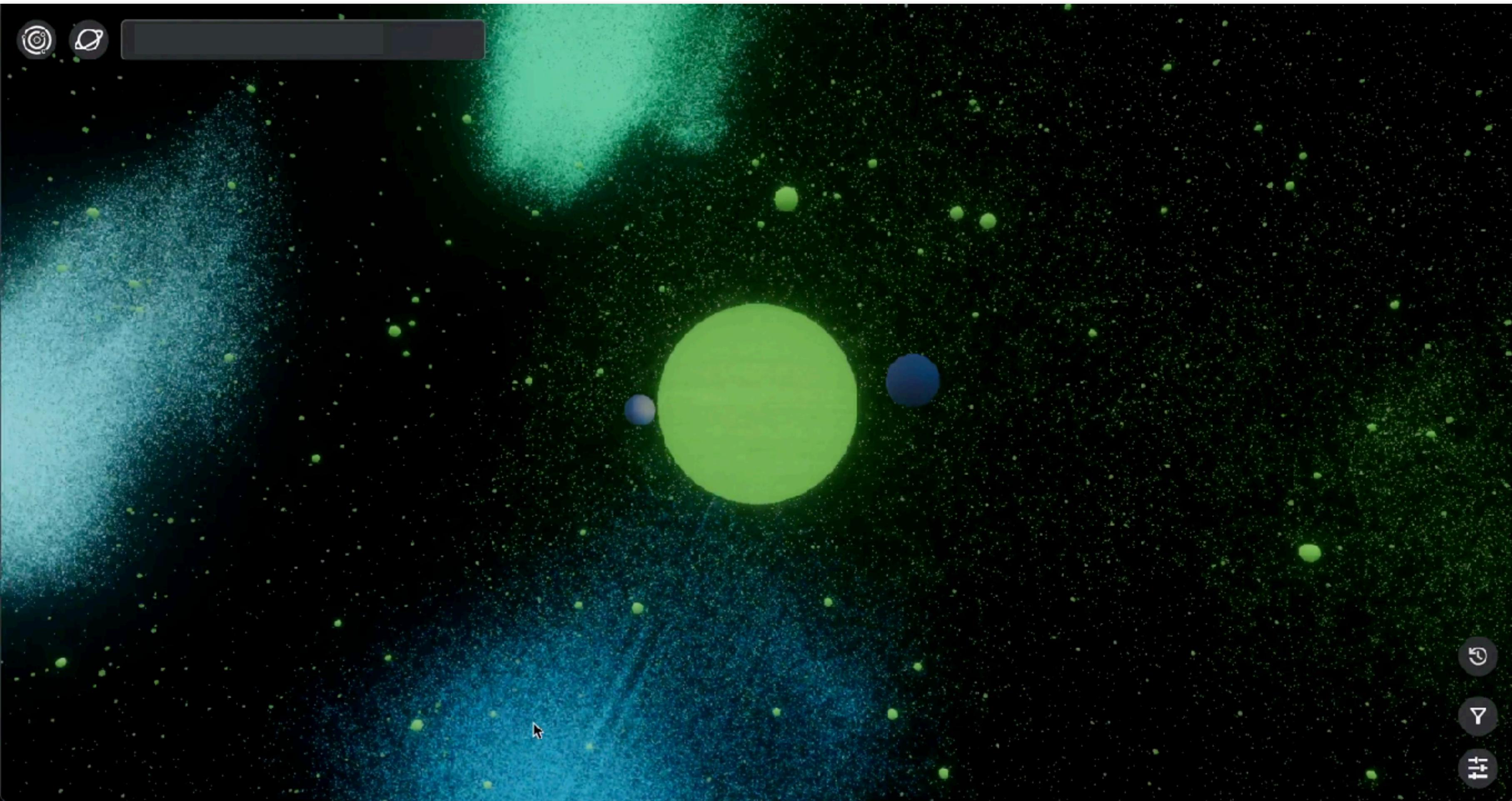
## Data Universe



Data Universe Demo - intro

# 01 #frontend

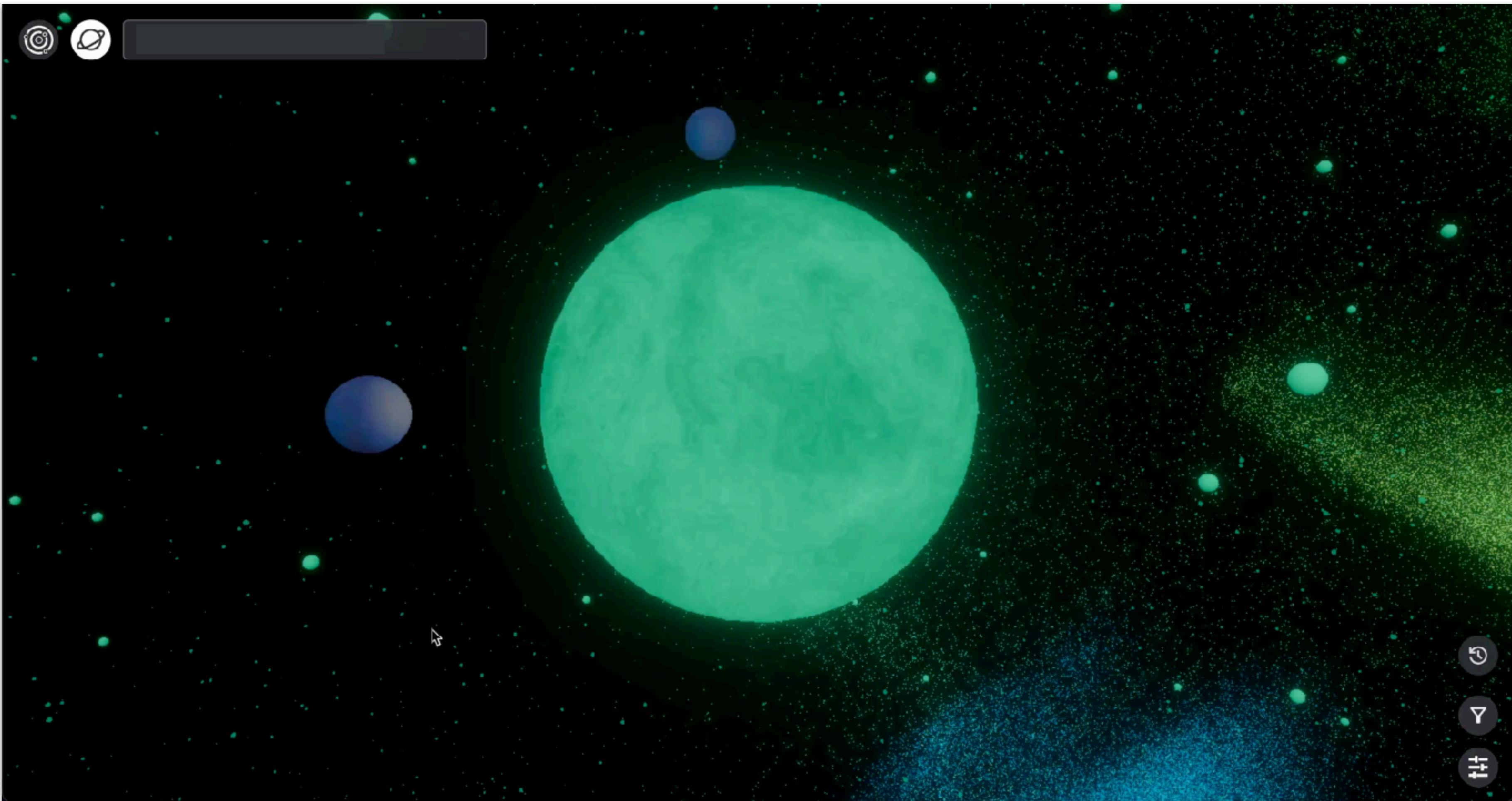
## Data Universe



Data Universe Demo - macro to micro

# 01 #frontend

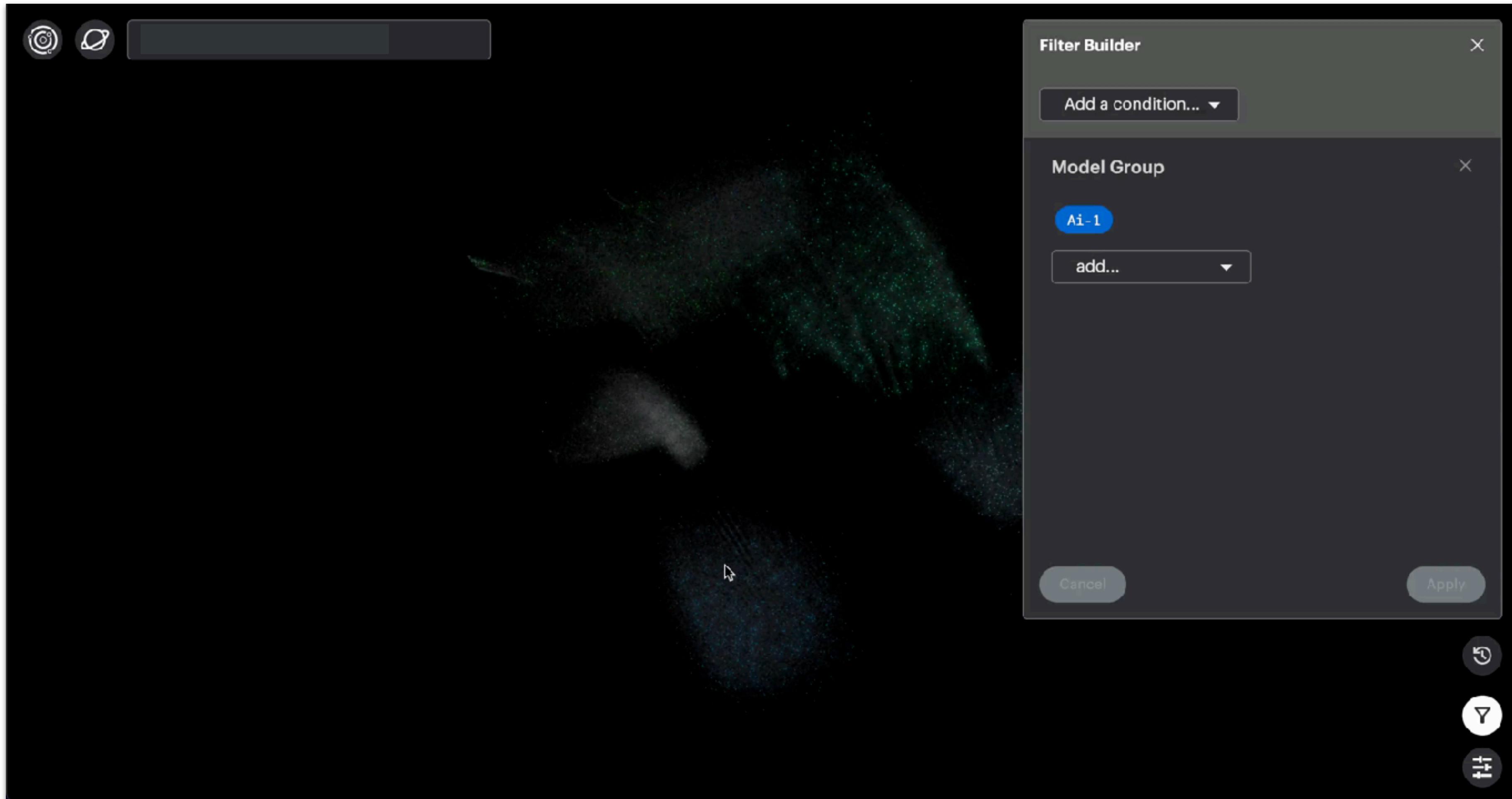
## Data Universe



Data Universe Demo - travel

# 01 #frontend

## Data Universe



Data Universe Demo - filtering



# Location Assessment Tool

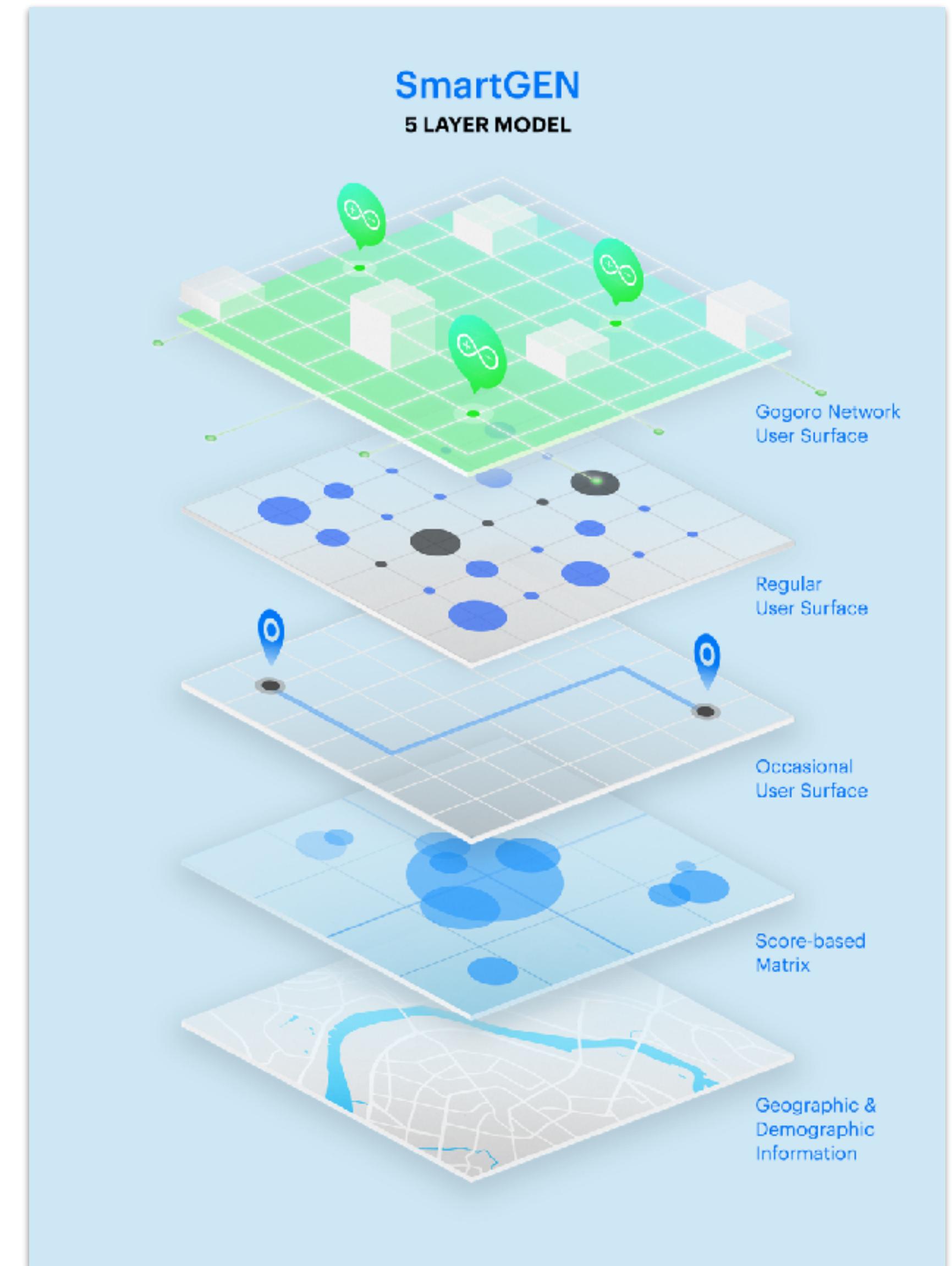
# 02 #full-stack Location Assessment Tool

## Background

- BD candidate List > Inquiry > Geospatial model > Response
- Assessment procedure is time-consuming
- Maintaining supportive information on My Map is problematic

## Target

- Simplify / automate the procedure
- Empower requesters to run the assessment procedure
- Make supportive information easier to host & maintain



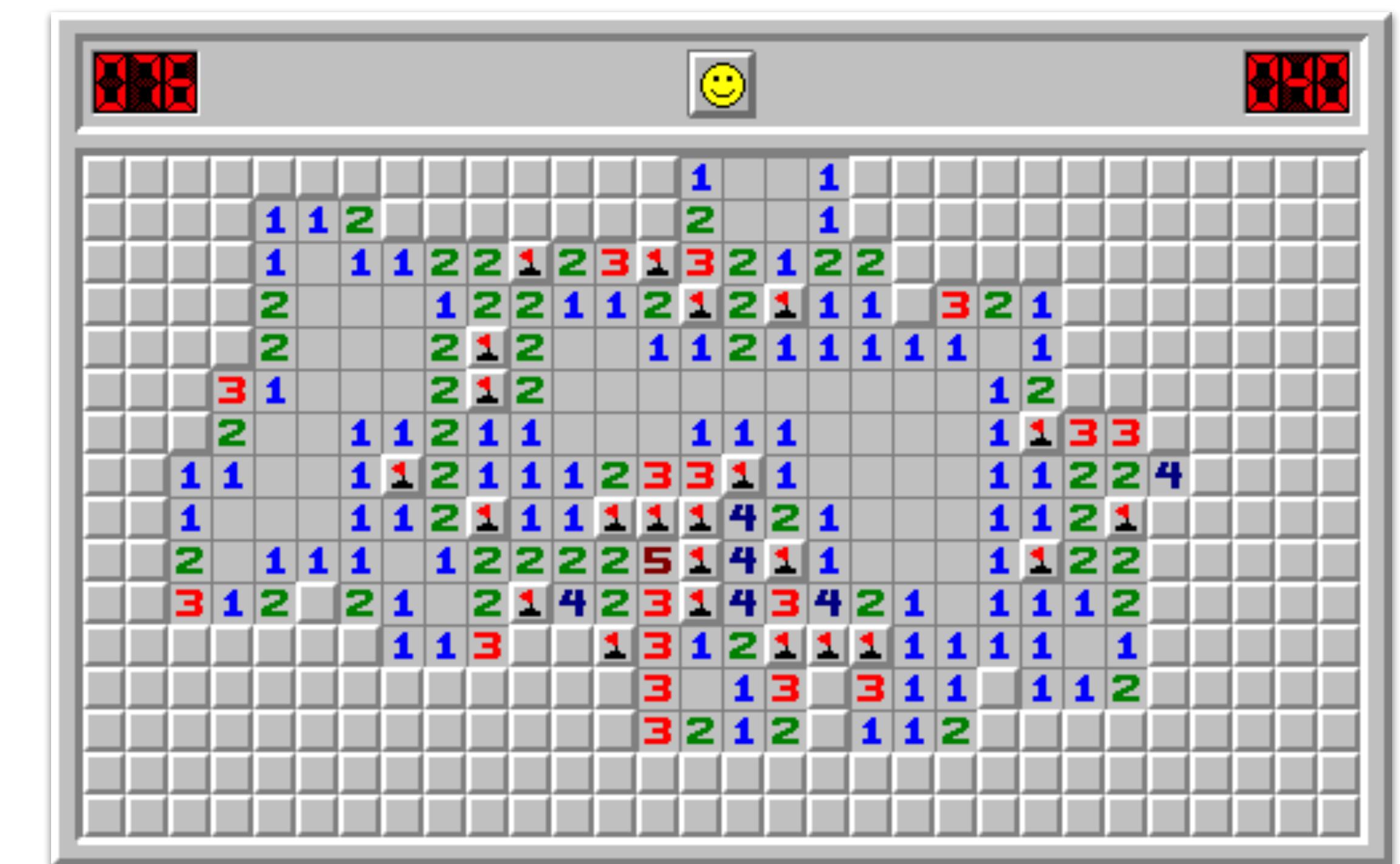
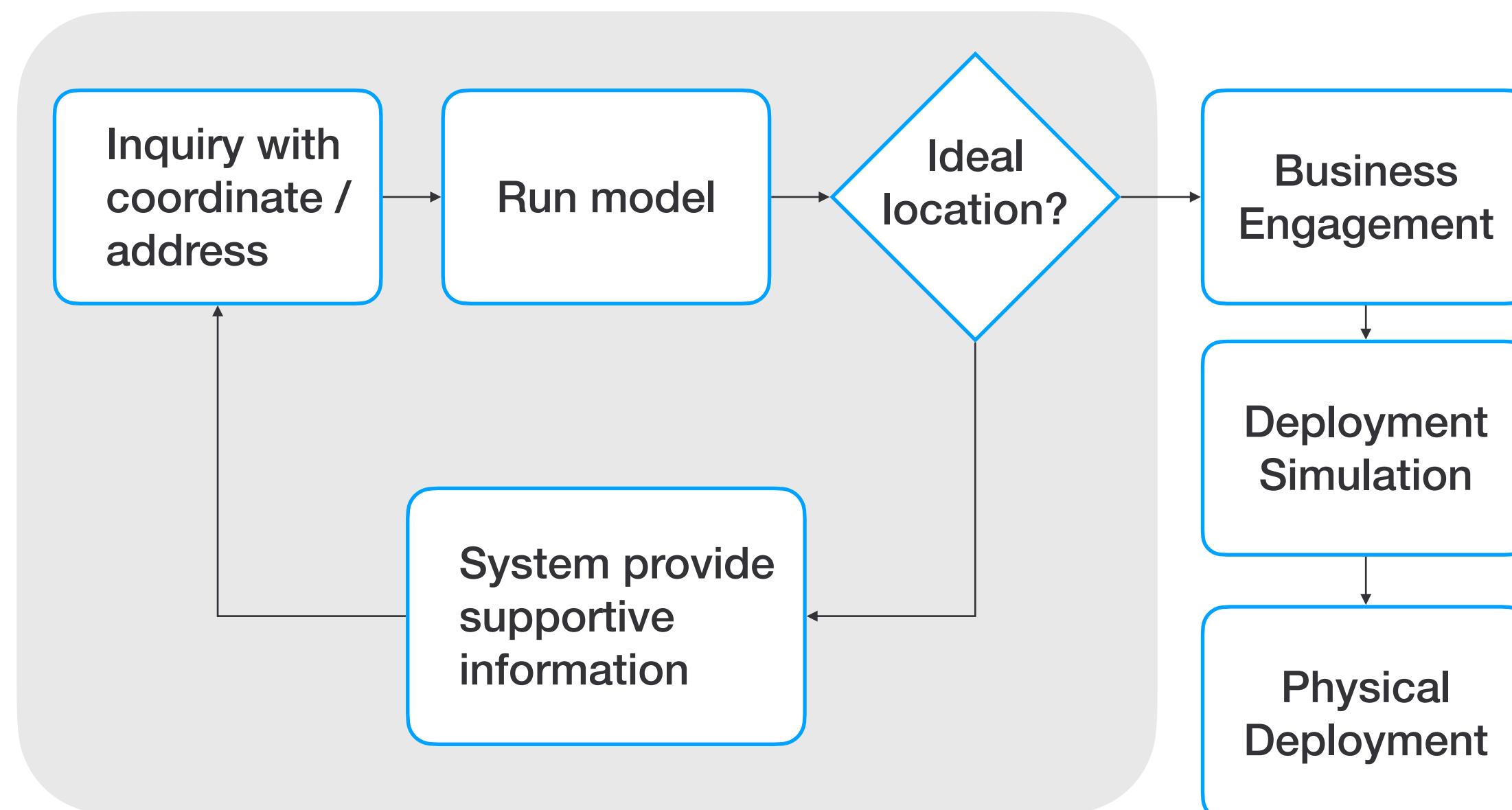
Source: Think Deeper: SmartGEN  
<https://www.gogoro.com/news/think-deeper-smartgen-network-management/>

# 02 #full-stack

## Location Assessment Tool

### Idea Development

- BD is a complex issue, we can only provide suggestion based on current status with GIS & ML know-how



- Somehow similar to Minesweeper

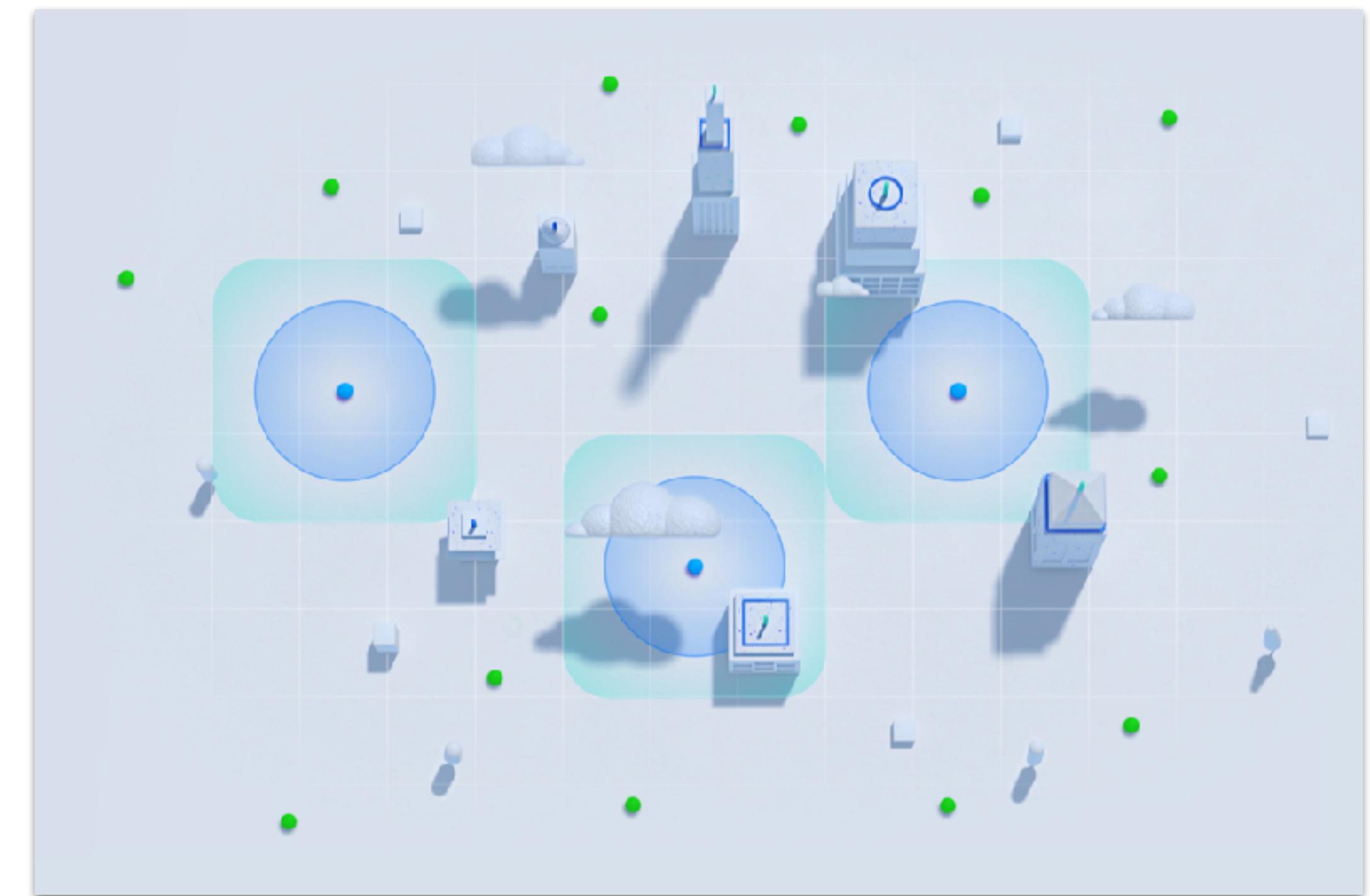
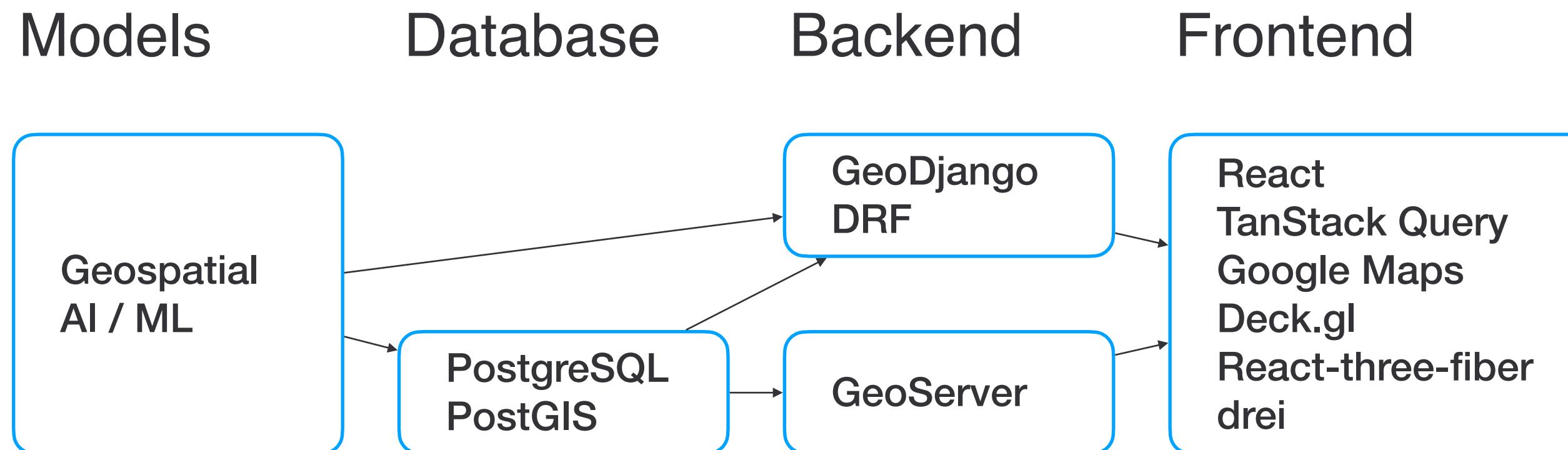
# 02 #full-stack

## Location Assessment Tool

### Technology Stack

- React, Google Maps JS API, React-three-fiber, Drei, Deck.gl
- Django, django-rest-framework, GeoDjango
- PostgreSQL, PostGIS, Blender (for exporting .glb file)

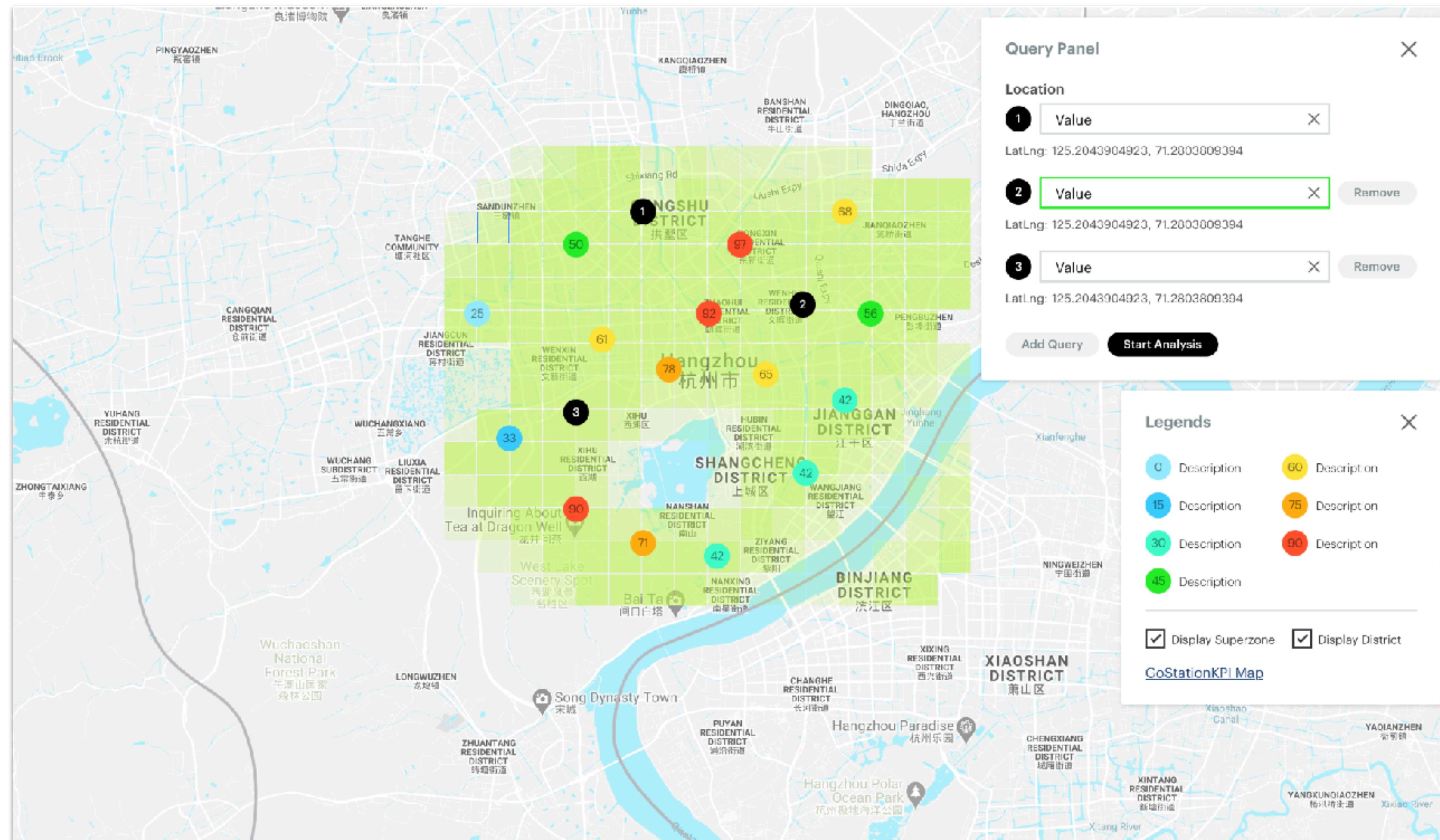
### Realization



Source: Think Deeper: SmartGEN  
<https://www.gogoro.com/news/think-deeper-smartgen-network-management/>

# 02 #full-stack

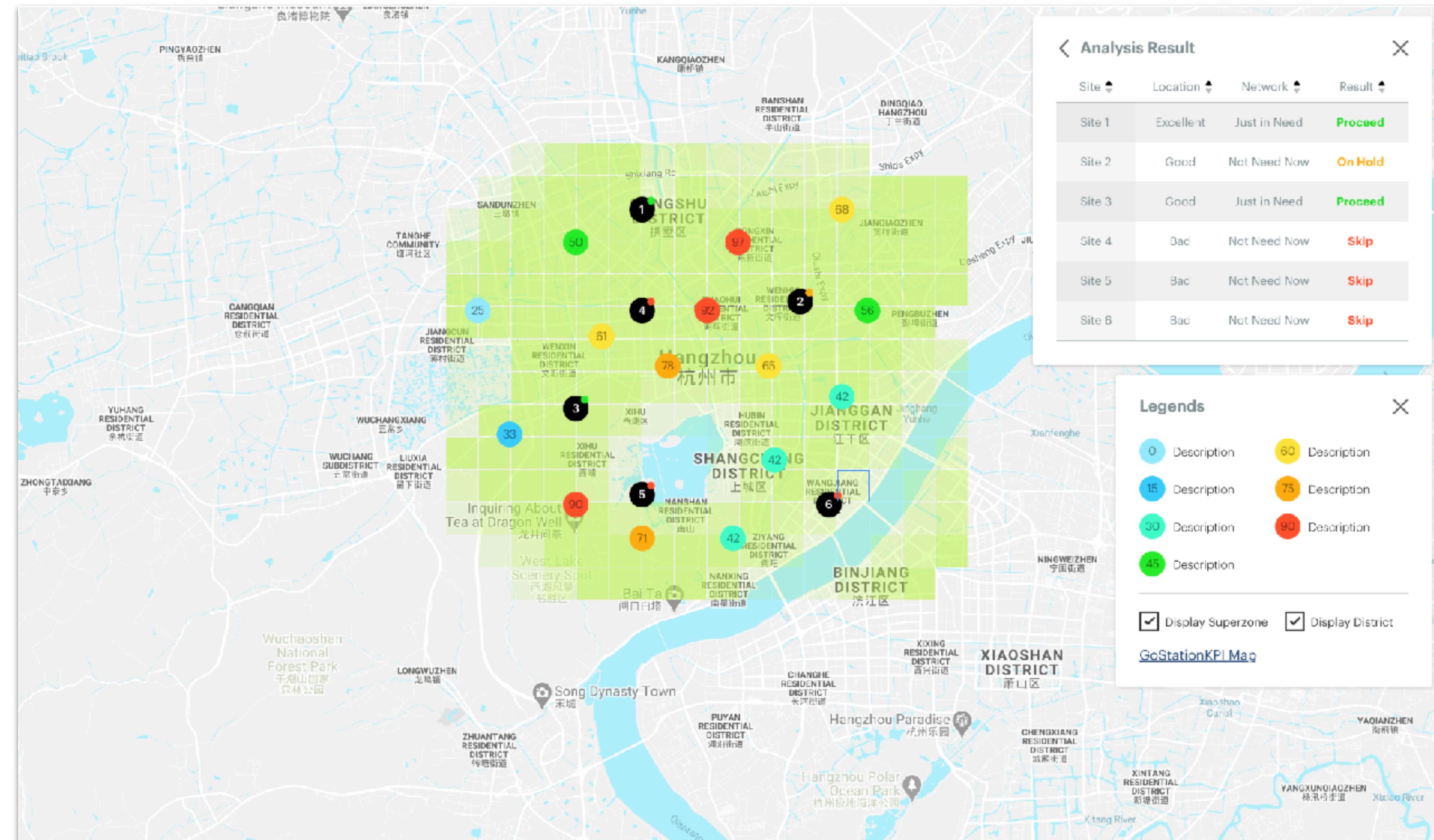
## Location Assessment Tool



Location Assessment Tool Mockup - 1

# 02 #full-stack

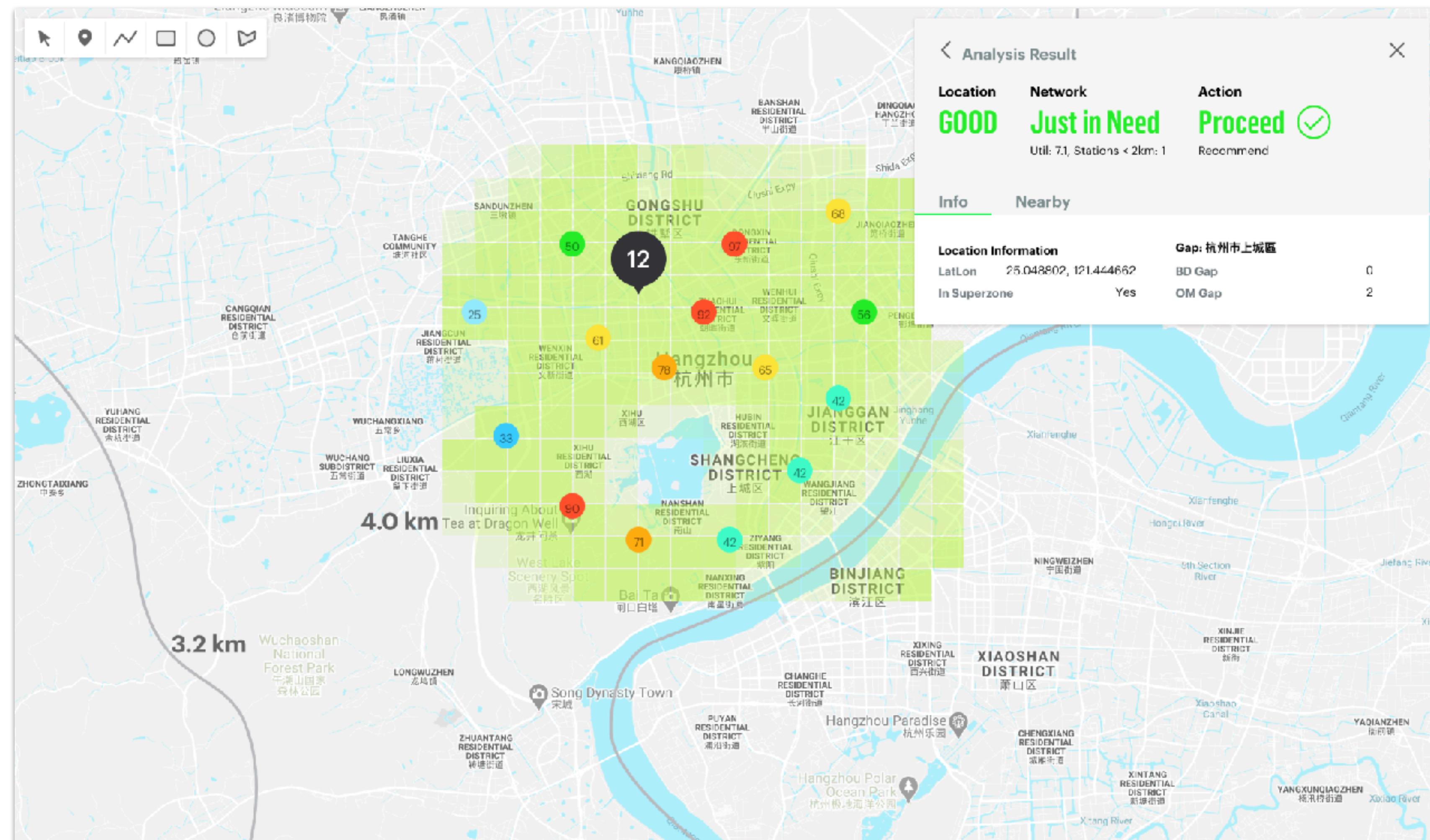
## Location Assessment Tool



Location Assessment Tool Mockup - 2

# 02 #full-stack

## Location Assessment Tool



Location Assessment Tool Mockup - 3

# 02 #full-stack

## Location Assessment Tool



GoStation Deployment Simulation Demo

# 02 #full-stack

## Location Assessment Tool

### Result

- Empower BD to initiate the location assessment process, reduced the time to deploy by 95%
- Supported over 2,500 GoStation deployments in Taiwan
- Deployment simulation -> Empower users to survey the site without actually being at site



Source: Think Deeper: SmartGEN

<https://www.gogoro.com/news/think-deeper-smartgen-network-management/>



Deployment Simulation with Google Street View & Three.js

# Business Intelligence Platform



# 03 #system-design

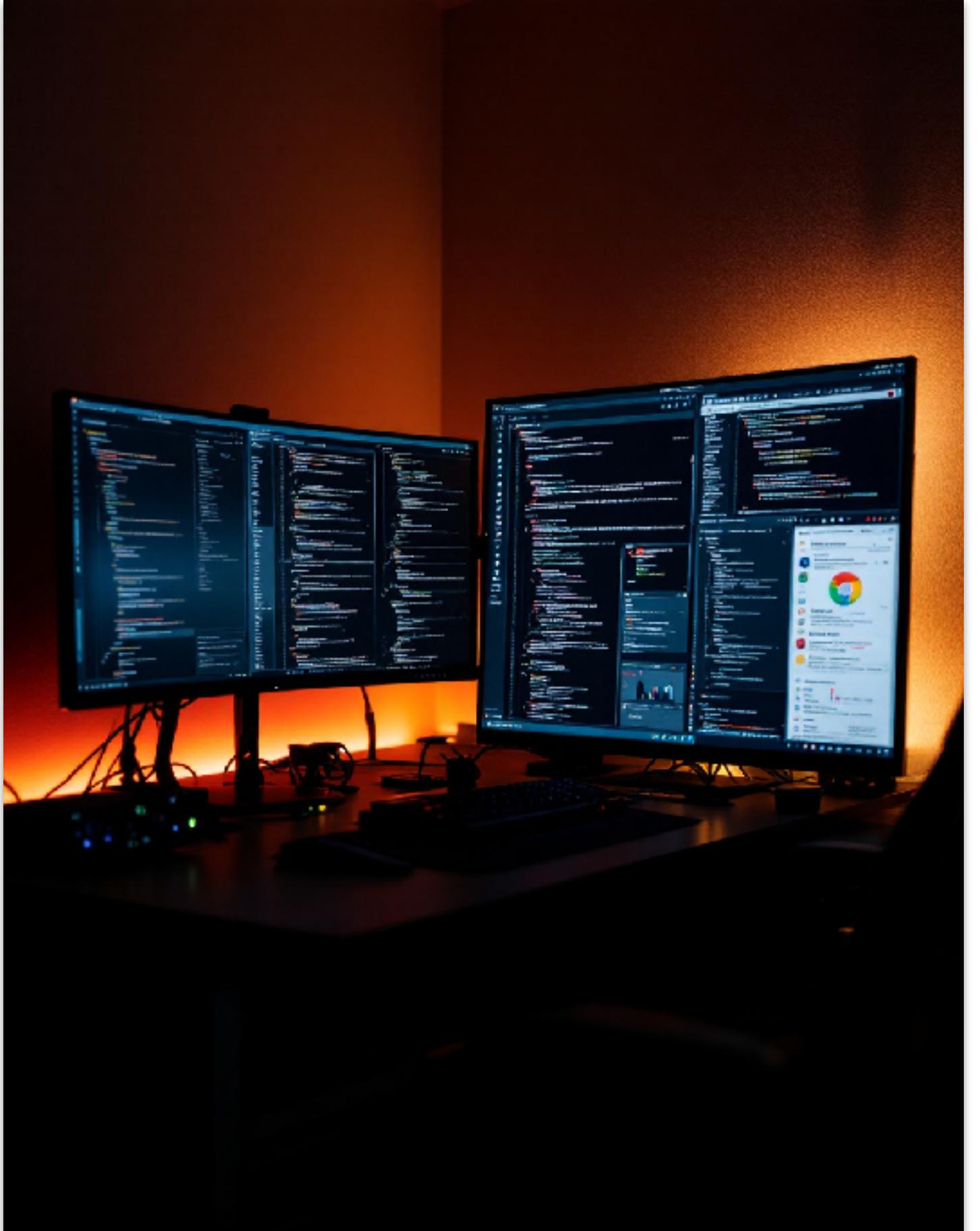
## Business Intelligence Platform

### Background

- DS projects was presented on an old monolithic platform
- The codebase was too tightly coupled, hard to maintain & scale
- One page serves everything / Hard to find info -> bad UX

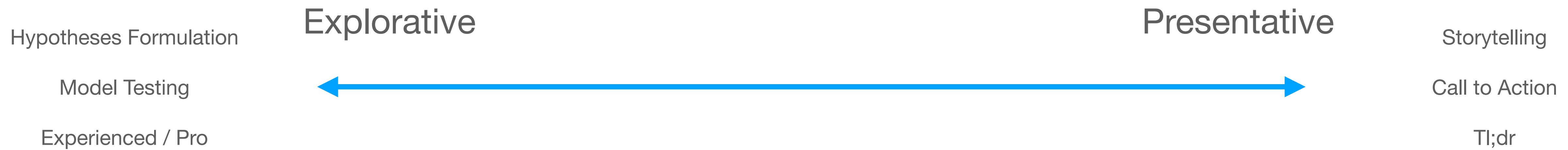
### Target

- Make the platform easy to scalable
- Decouple components for better maintainability
- Improve UX



# 03 #system-design

## Business Intelligence Platform

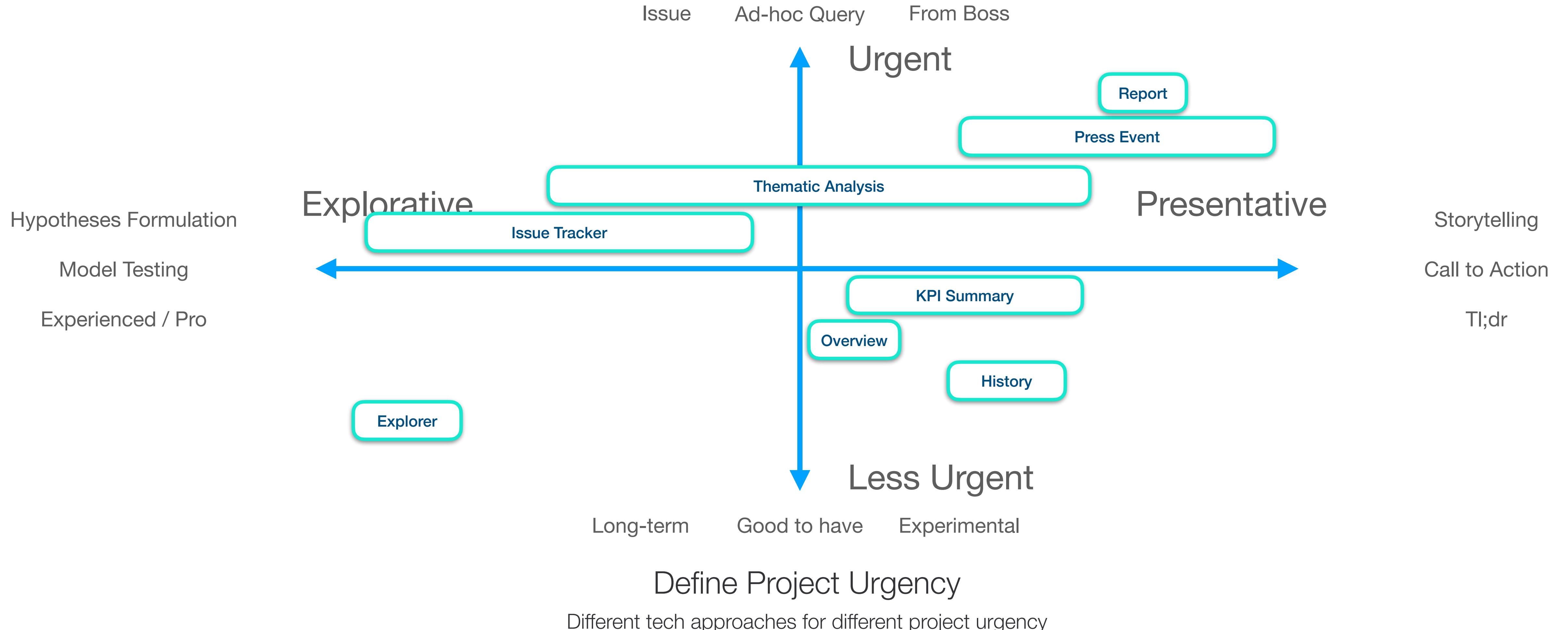


Define User Goals

Different design approaches for different user goals

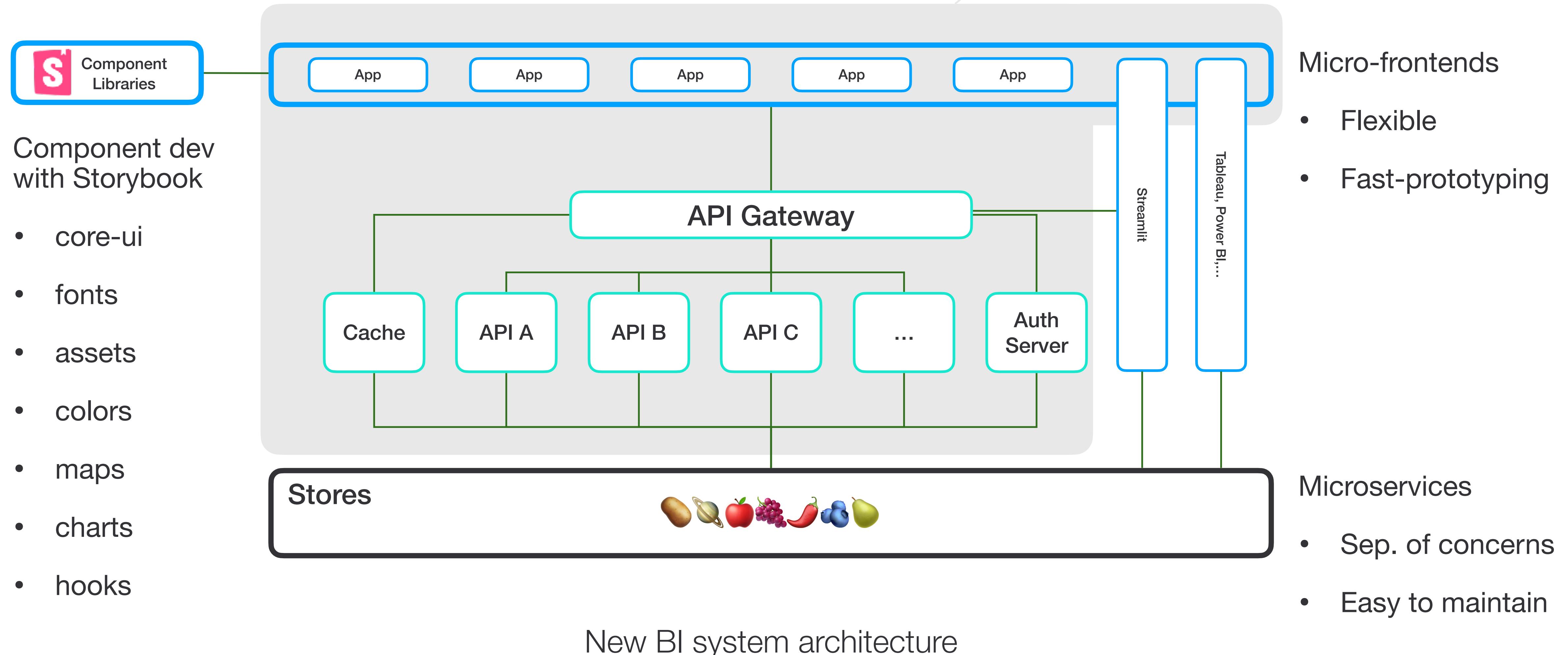
# 03 #system-design

## Business Intelligence Platform



03 #system-design

# Business Intelligence Platform



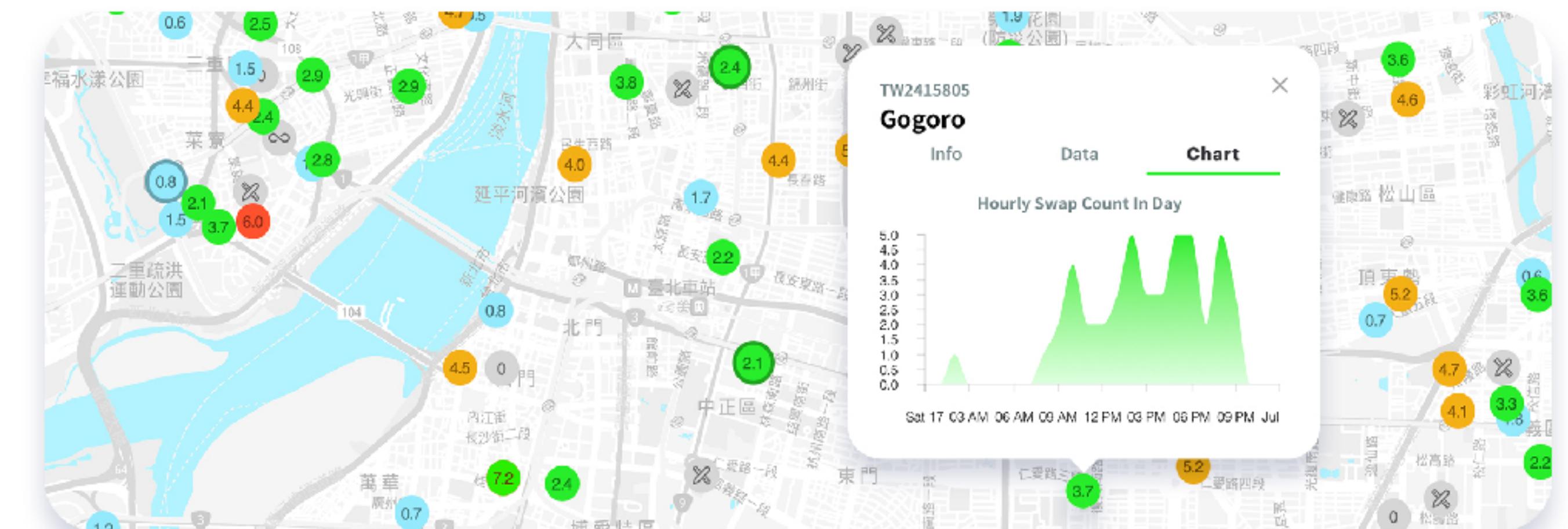
The system's new architecture, powered by microservices and micro-frontends, enhanced maintainability and enabled faster prototyping.

# 03 #system-design

# Business Intelligence Platform

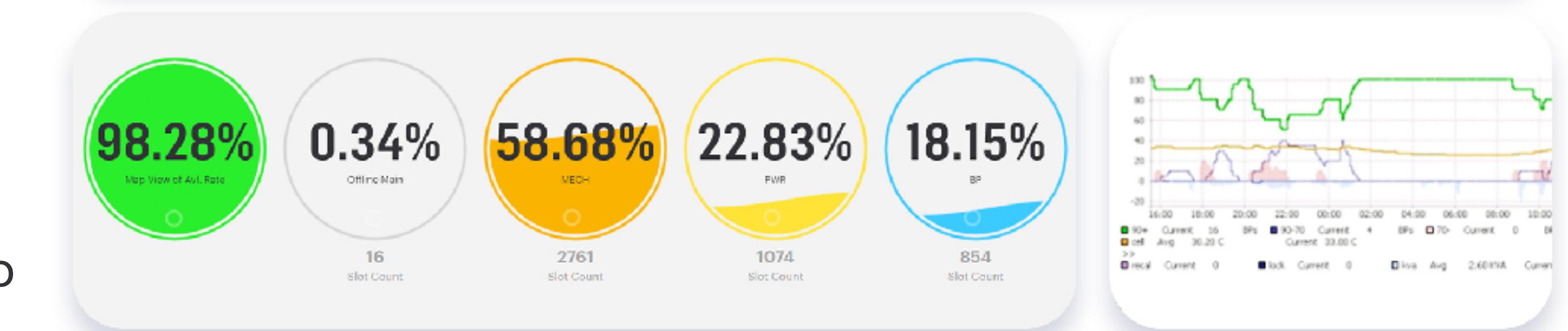
## Technology Stack

- React, Svelte, Storybook, Style components, Express, Nginx
- Python, Django, Django-rest-framework, FastAPI
- PostgreSQL, MongoDB, Redis
- Docker, Kubernetes, GitLab CI
- Streamlit, Tableau, Power BI



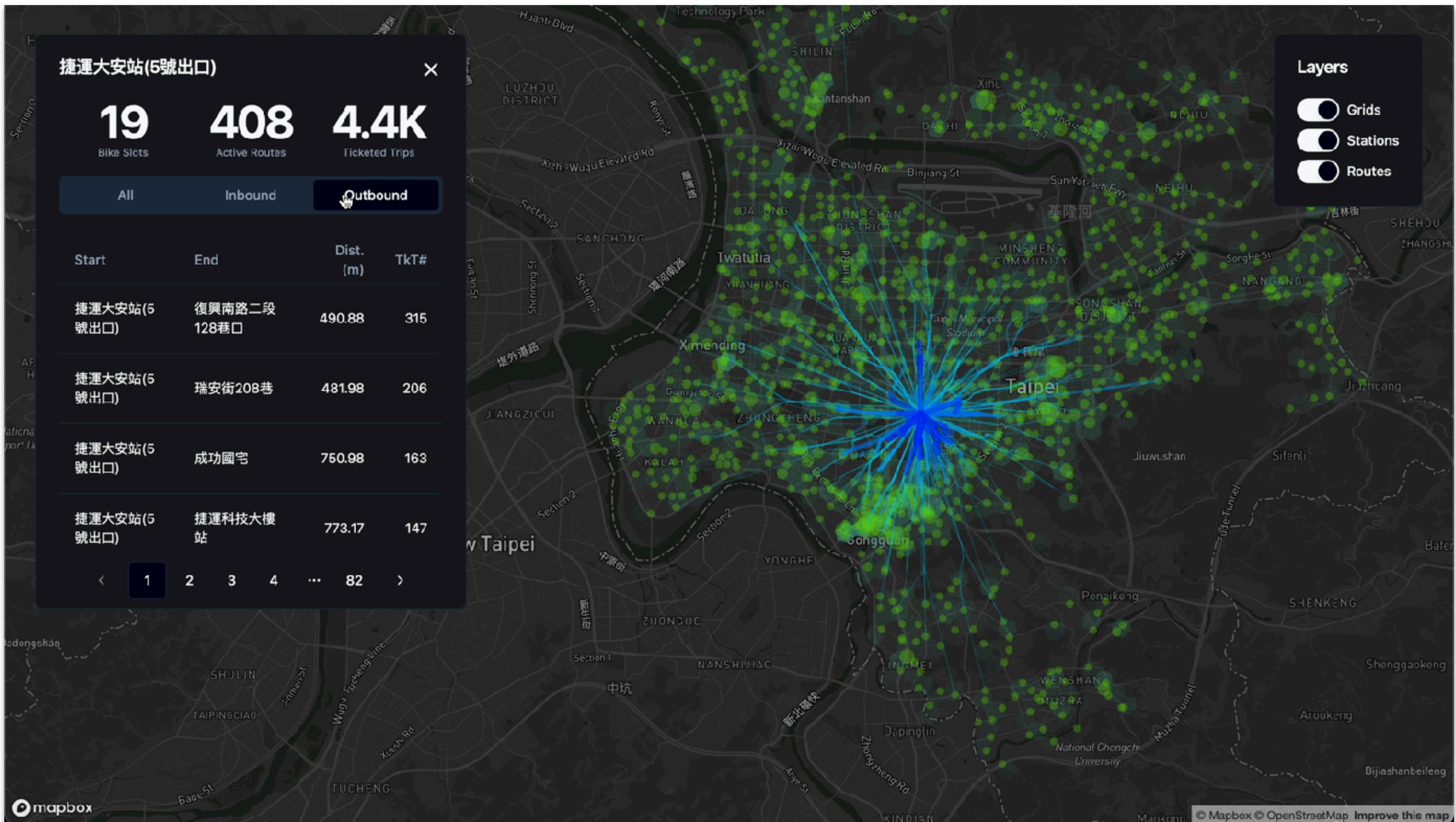
## Result

- Trusted by 30+ departments
- De-facto decision support system across Gogoro
- Facilitating investor presentations & press events



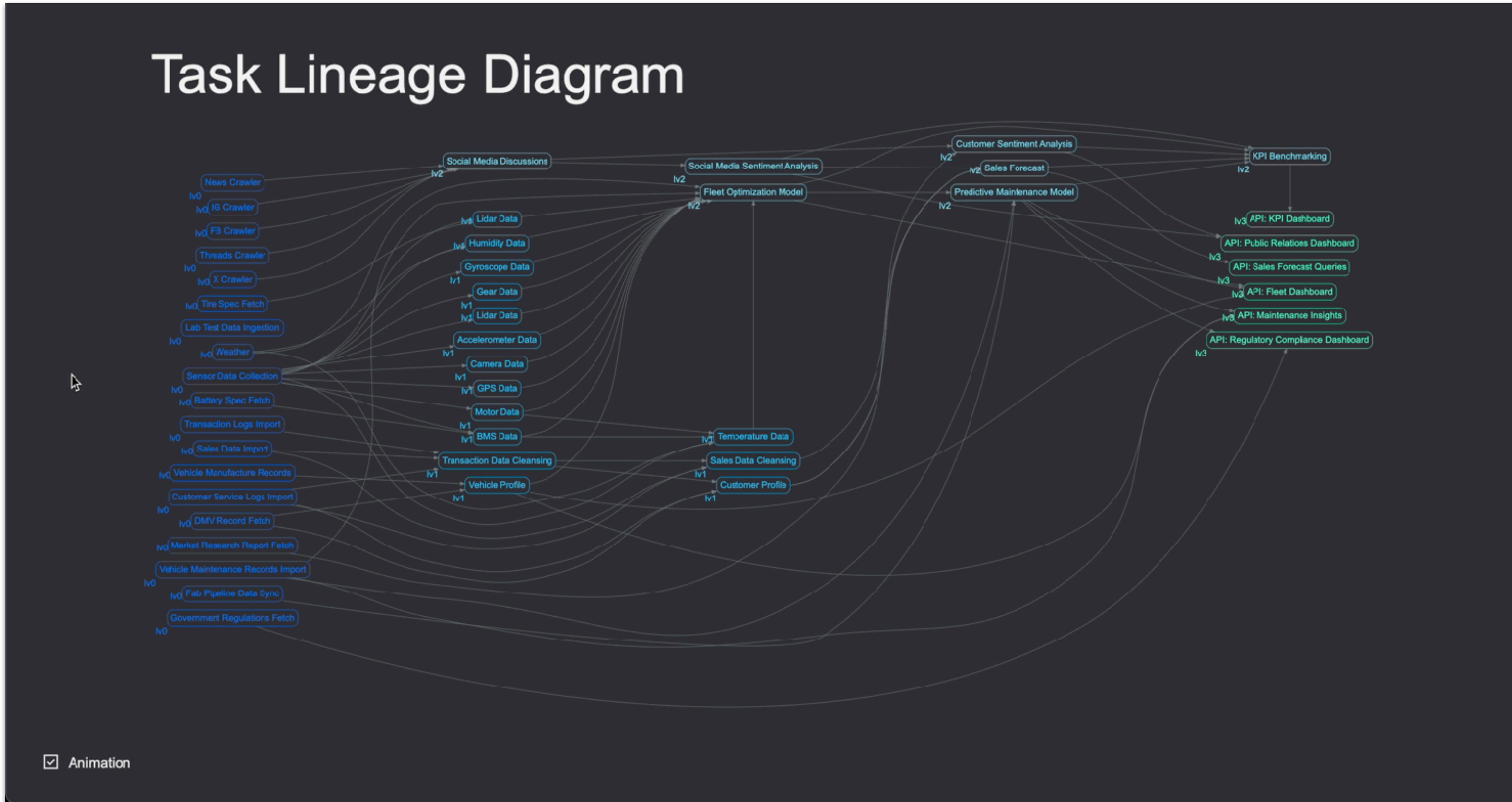
Source: Think Deeper: Gogoro Platform  
<https://www.gogoro.com/news/think-deeper-gogoro-platform/>

# Side Projects



YouBike Route Explorer - A geospatial app for exploring urban mobility trends in Taipei

# Side Projects



[Task Lineage Generator](#) - A visualization tool for mapping task dependencies

# Side Projects

More on

- [jtingjiang.com](http://jtingjiang.com)
- [GitHub](https://github.com/jtingjiang)

# Thank you!

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