Open Data:

- London UK Airbnb Open Data (2023): http://insideairbnb.com/get-the-data
- Residential Mobility Index: https://thunbergii.app.carto.com/catalog/dataset/cdrc_residential_6d0ab56e
- Spatial Features: https://thunbergii.app.carto.com/catalog/dataset/cdb_spatial_fea_6b8f8034
- Classification of Workplace Zones: https://thunbergii.app.carto.com/catalog/dataset/cdrc_classificat_4b258856
- Lower Tier Local Authority: https://thunbergii.app.carto.com/catalog/geography/ons_ltla_a64e5794

Useful links:

1. Carto Colors: https://carto.com/carto-colors/
2. Carto3 x Python: https://docs.carto.com/data-and-analysis/carto-+-python
3. Pydeck: https://deckgl.readthedocs.io/en/latest/index.html
4. XGBoost: https://xgboost.readthedocs.io/en/stable/
5. GitHub Repo: https://github.com/helenmck1/SDS-bootcamp-2023_Tokyo

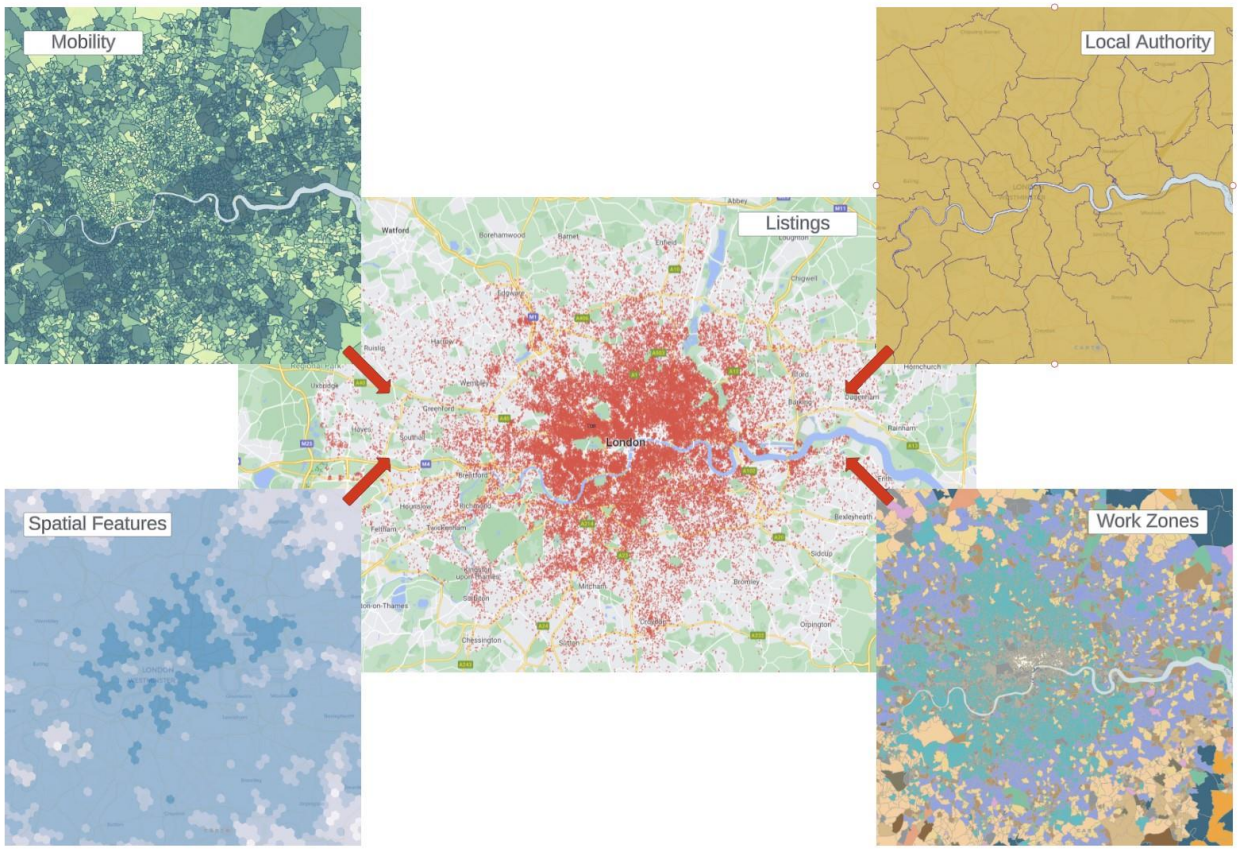
Tools:

- Google Colab
- Google BigQuery
- Carto3
- Python3

Python Libraries:

- pydeck-carto
- carto-auth
- pandas
- geopandas
- XGBoost
- numpy
- Big Query API
- SHAP
- Matplotlib

Carto3 Workflow Goal:



Carto3 Workflow Overview:

SQL Snippets:

Data Preparation (Yellow):

London Listing SQL Select

```
SELECT
geom,
neighbourhood,
room_type,
price,
minimum_nights,
number_of_reviews,
reviews_per_month,
availability_365,
number_of_reviews_ltm
FROM
$a
```

Add Spatial Features (Purple):

Spatial Features SQL Select

```
SELECT
h3,
population,
female,
male,
retail
leisure,
tourism,
transportation,
urbanity,
elevation
FROM
$a
```

Add Polygon Features (Blue):

Workplace Zones SQL Select

```
SELECT
geom,
Supergroup_Name,
Group_Name
FROM
$a
```

Mobility Index SQL Select

```
SELECT
geom,
y2016
FROM
$a
```

Workplace Zones SQL Join

```
SELECT
$a.*,
$b.Supergroup_Name as work_zone,
$b.Group_Name as work_zone_specific
FROM $a JOIN $b
ON ST_Intersects($a.geom, $b.geom)
```

Mobility Index SQL Join

```
SELECT
$a.*,
$b.y2016 as mobility
FROM $a JOIN $b
ON ST_Intersects($a.geom, $b.geom)
```