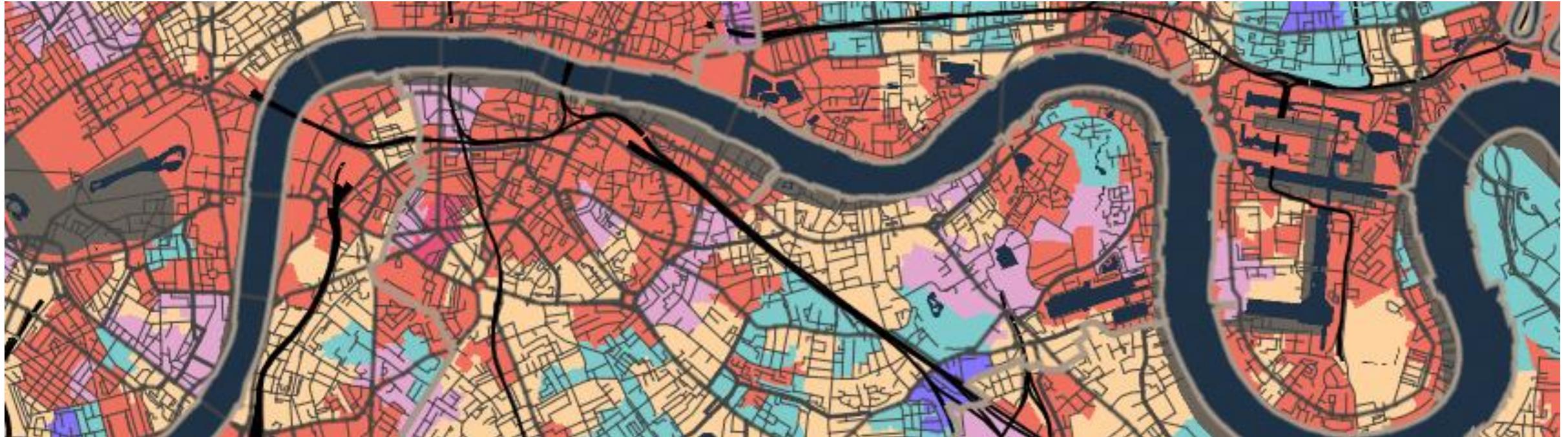


# Geography in the Field II

## W8 – Mapping London



Dr Justin van Dijk



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# Geography in the Field II

... but more widely thinking about data and maps



Dr Justin van Dijk



j.t.vandijk@ucl.ac.uk



# This week

- Why is mapping important?
- How do GIScience and spatial analysis fit in?
- Power and privacy
- Some examples: Mapping [Contemporary] London
- Practicalities

# Before we start

- Go to [www.menti.com](http://www.menti.com)
- Use code: 7670 6162

# This week

- Why is mapping important?
- How do GIScience and spatial analysis fit in?
- Power and privacy
- Some examples: Mapping [Contemporary] London
- Practicalities

# Importance

# Why is mapping important?

- Many challenges and problems are inherently geographical.
- Almost all data is tied to specific locations and exhibits spatial variability.
- Helps answer the question: What is this place like compared to other places?
- They can be visualised into a format that is more intuitively understood by the human brain.

# Why is mapping important?

## (Geo)Visualisation

Translating numbers into something that the human brain “understands better”.

# Supermarkets around Brixton

supermarket - Google Maps

google.com/maps/search/supermarket/@51.4637717,-0.1273064,14.7z/data=!4m2!2m1!6e6?hl=en&entry=ttu&g\_ep=EgoYMD10M...

supermarket

Results ⓘ

Sort by ▾

**Tesco Superstore**  
3.7 ★★★★★ (529) ⓘ · £  
Supermarket · ⚡ · 13 Acre Ln  
Open · Closes 11 pm · 0345 677 9081  
In-store shopping · In-store pick-up

**Sainsbury's**  
4.1 ★★★★★ (1,689) ⓘ · ££  
Supermarket · ⚡ · 2 Tulse Hill  
Open · Closes 11 pm · 020 3126 7399  
In-store pick-up · Delivery

**Lidl**  
4.2 ★★★★★ (2,555) ⓘ  
Supermarket · ⚡ · 189 Clapham Rd  
Open · Closes 10 pm · 020 3966 5566  
In-store shopping

**Tesco Express**  
3.4 ★★★★★ (39) ⓘ · £  
Supermarket · ⚡ · 128 Herne Hill  
Open · Closes 11 pm · 020 3966 5566  
In-store shopping

Rating ⓘ Hours ⓘ All filters

Delicias Vauxhall — Sainsbury's Local Valley Food & Wine Budgens Supermarket with meat fro King's College Hospital Nisa Local Convenience store for everyday... Tesco Express Iceland Supermarket Brixton Supermarket specialising in... Lidl Tesco Superstore Londis lyham road orange place Londis Grocer cou Layers Sainsbury's Super Save Tesco Express Sainsbur's Local

Map data ©2024 Google United Kingdom Terms Privacy Send product feedback 200 m

# Pubs in Bloomsbury

pub - Google Maps

google.com/maps/search/pub/@51.5226195,-0.1365354,15.97z/data=!4m2!2m1!6e5?hl=en&entry=ttu&g\_ep=EgoYMDI0MTAyMC...

Price Rating Hours All filters

Results

Sponsored :

**Marlborough Arms**  
4.1 ★★★★☆ (1,271) ⏲ £10–20  
Pub · ⚡ · 36 Torrington Pl  
Old-fashioned pub with simple food menu  
Open · Closes 11 pm  
✓ Dine-in · ✗ Takeaway · ✗ Delivery

**The Court**  
4.6 ★★★★★ (2,804) ⏲ £10–20  
Pub · ⚡ · 108a Tottenham Ct Rd, Greater  
Spacious modern corner pub  
Open · Closes 12 am  
Dine-in · No takeaway · No delivery

**The Northumberland Arms**  
4.0 ★★★★☆ (675) ⏲ £10–20  
Pub · ⚡ · 108a Tottenham Ct Rd, Greater  
Traditional pub with simple food menu  
Open · Closes 11 pm

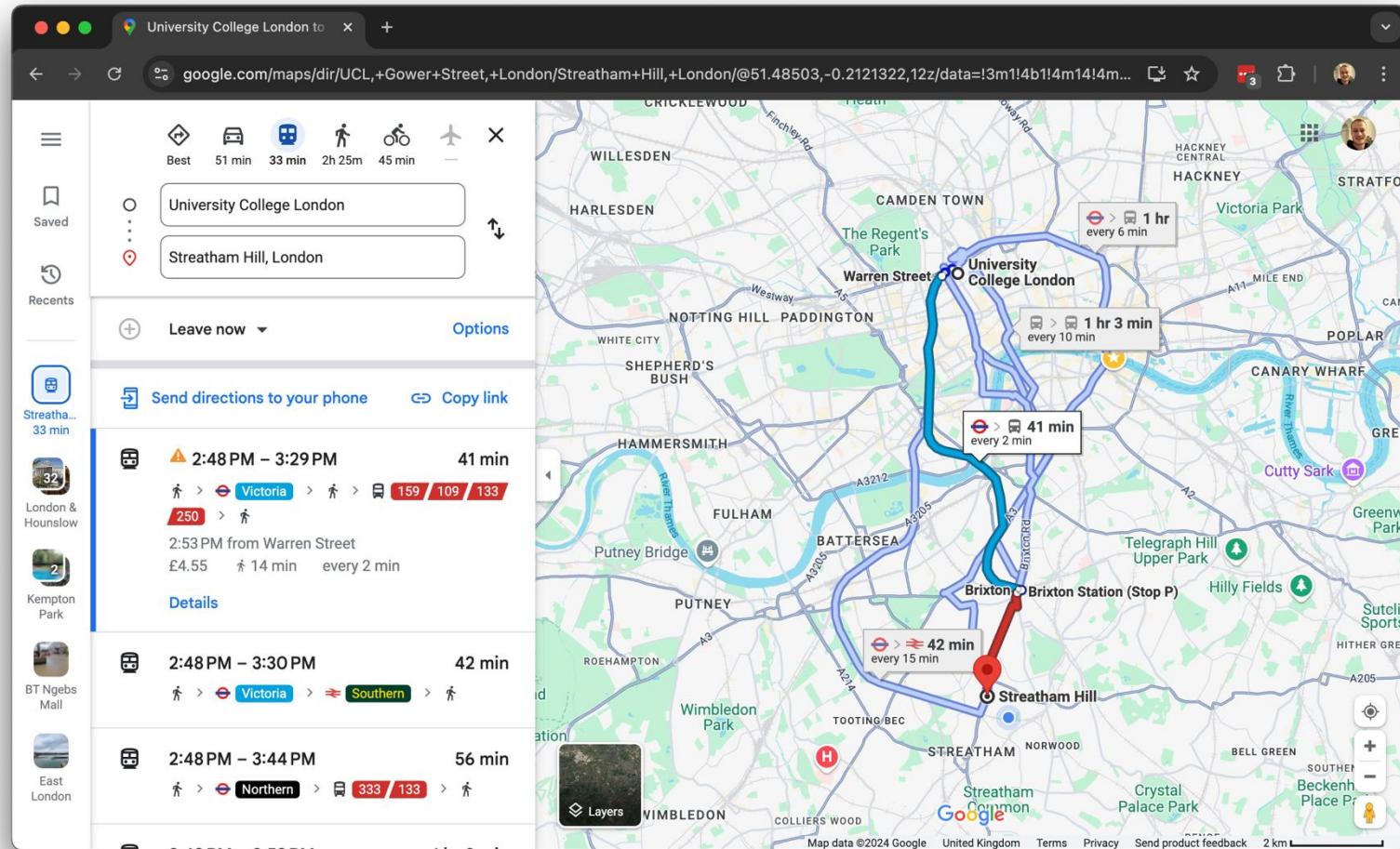
**Eat, Drink & Relax**  
We Have The Quality Food And Your  
Favourite Drinks. All You Need To Do Is... [Visit site](#)

**RESERVE A TABLE**

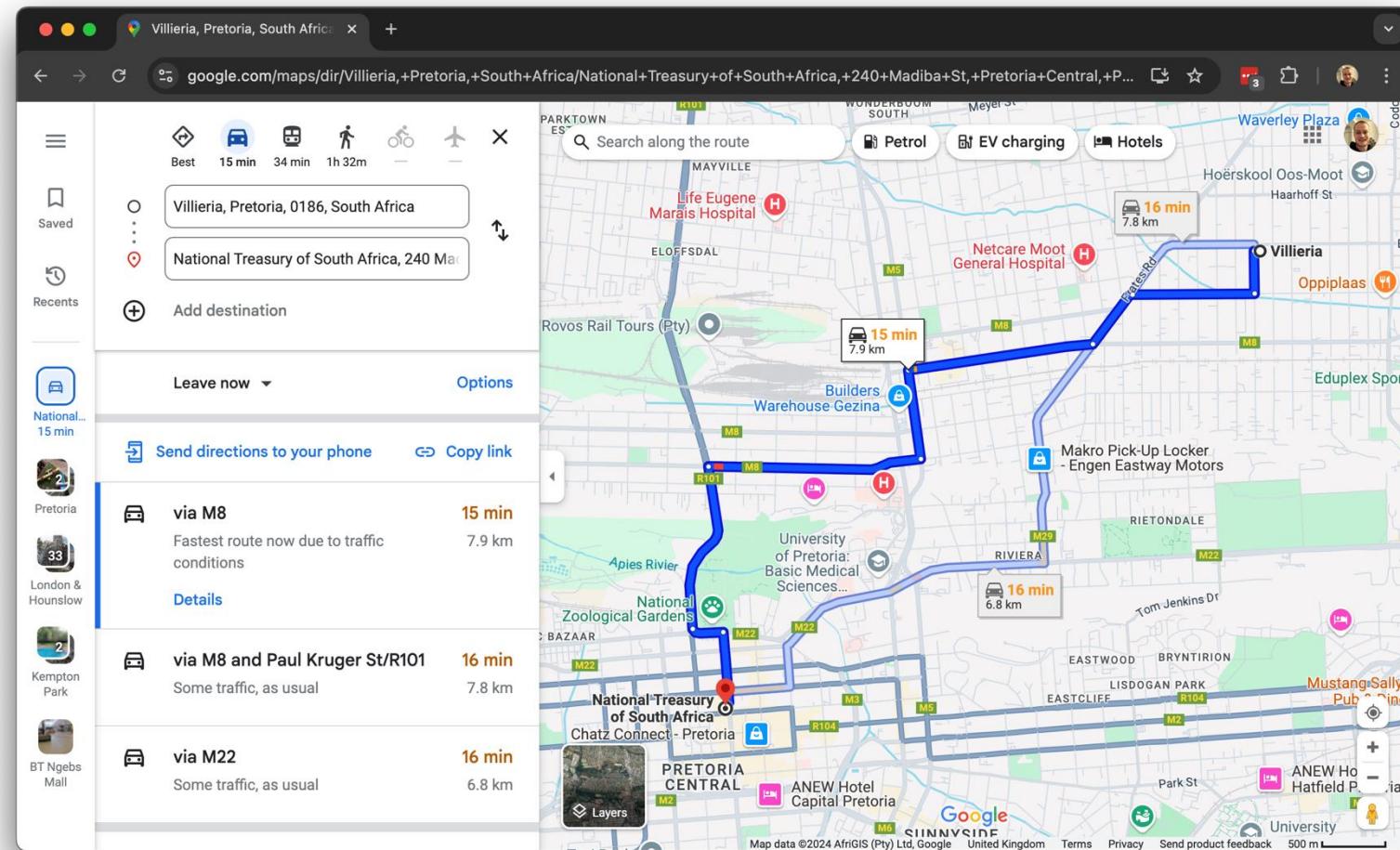
Update results when map moves

Map data ©2024 United Kingdom Terms Privacy Send product feedback 100 m

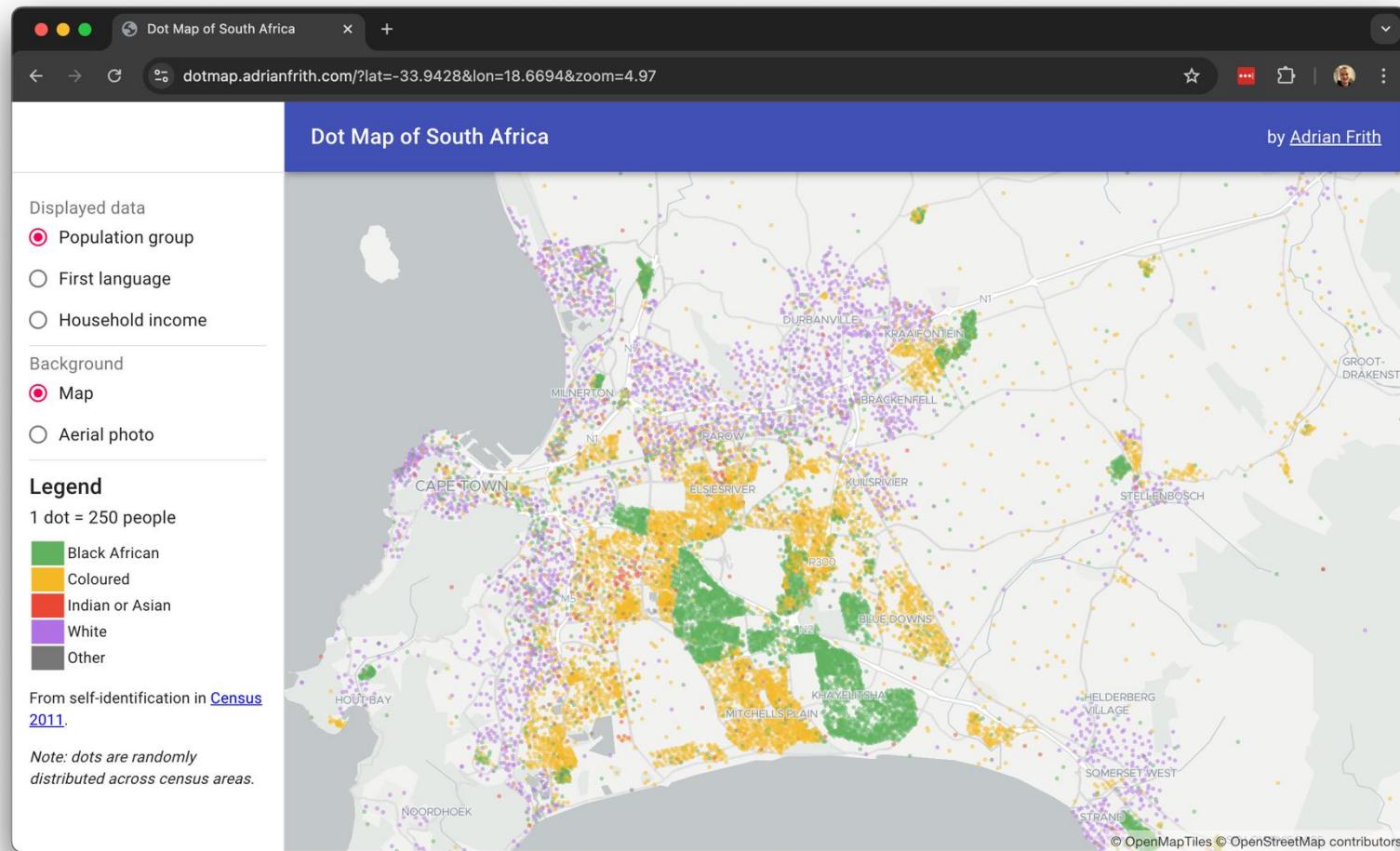
# Finding your way across the river



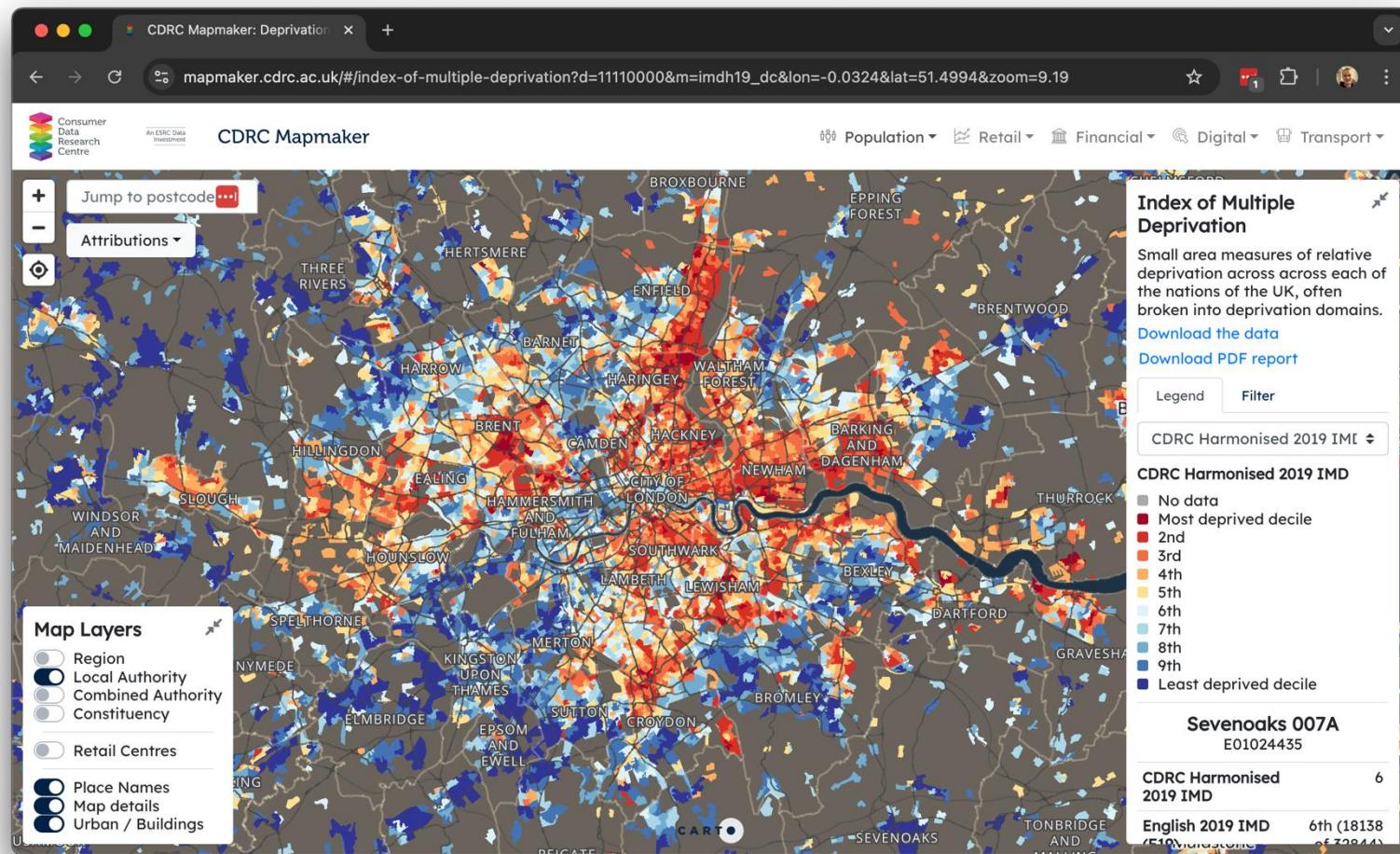
# Finding your way abroad



# Segregation in Cape Town



# Index of Multiple Deprivation in England



# Requirements

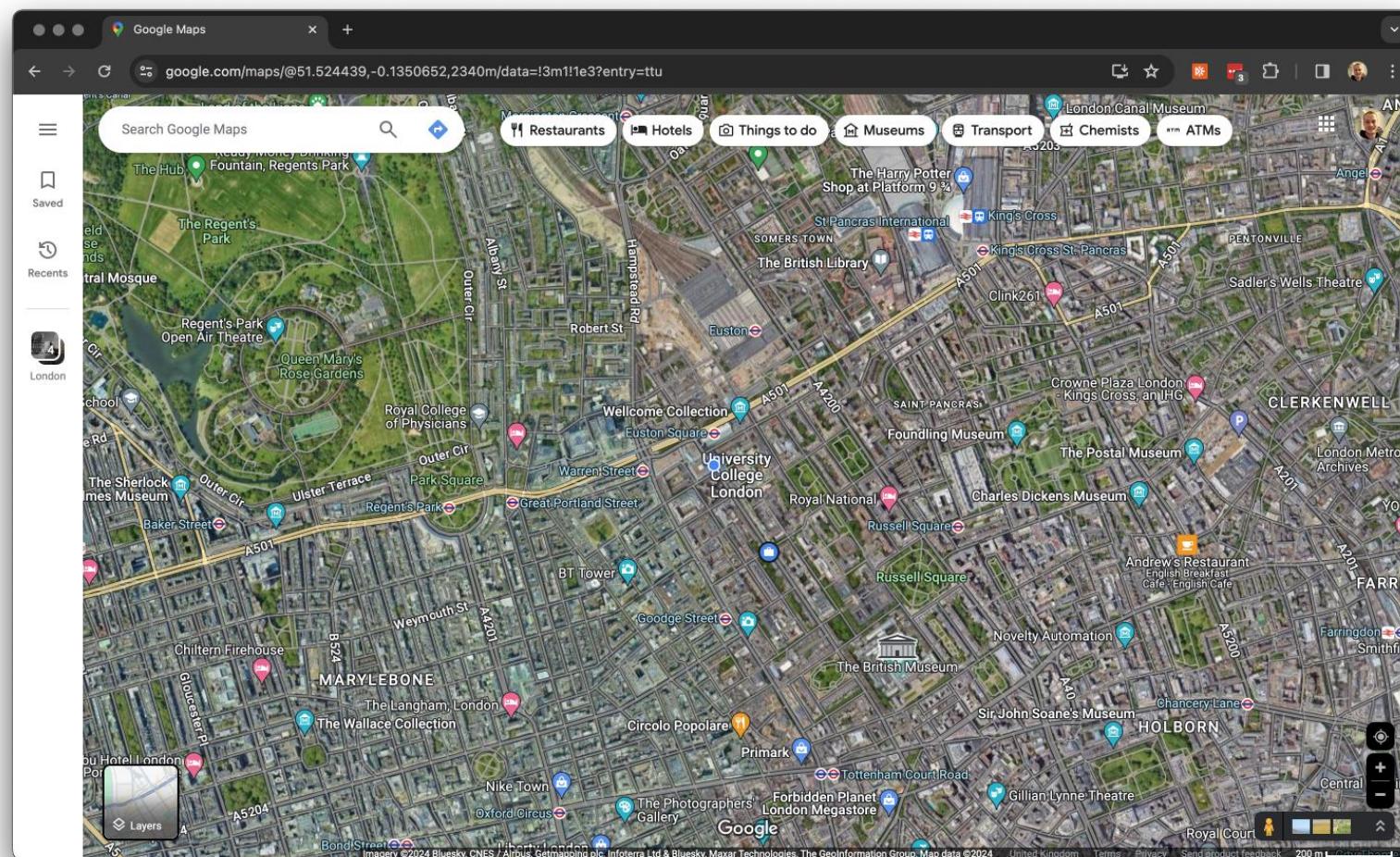
- GIScience: Theory
- GISystems: Methods and tools

GIScience

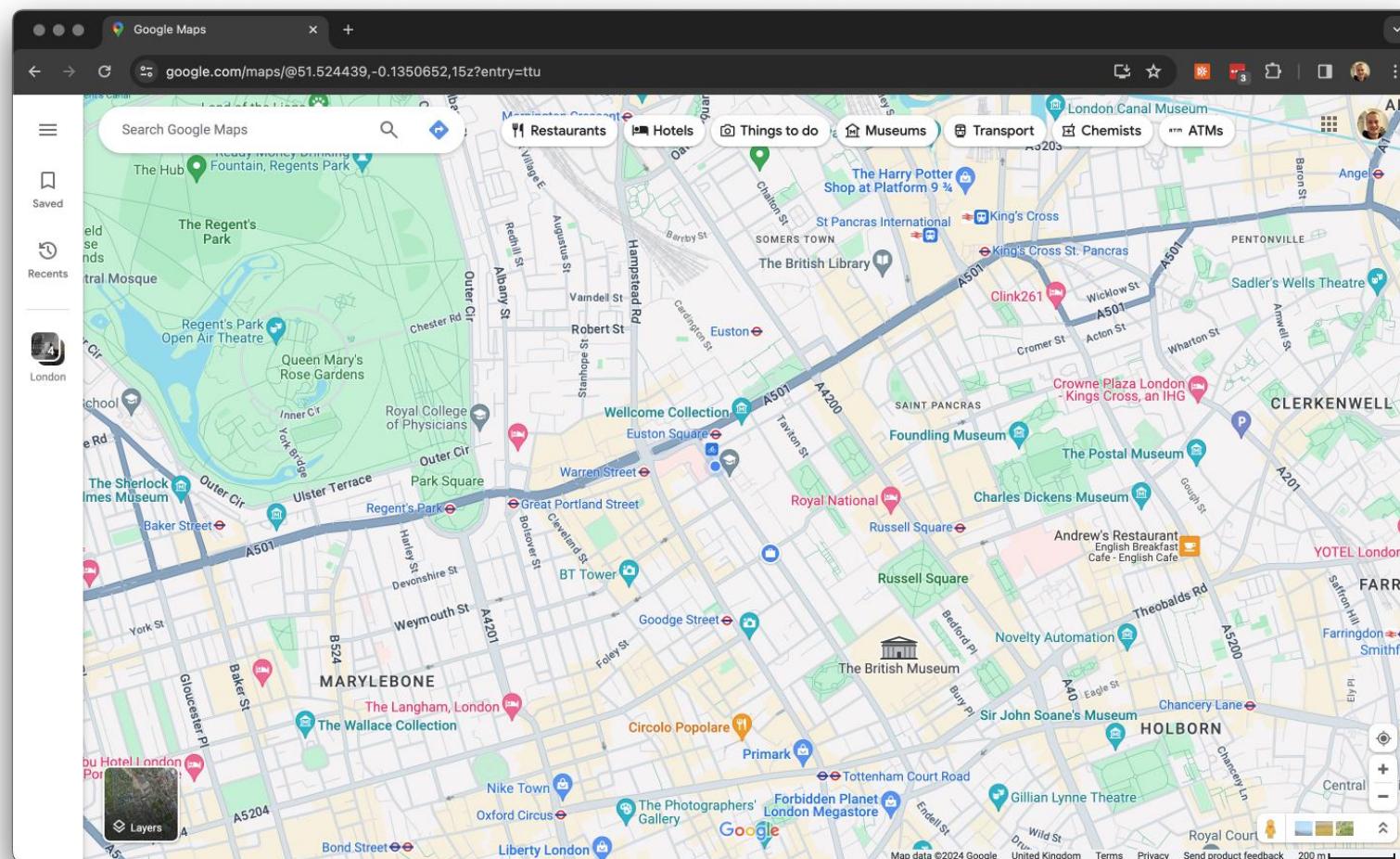
# Geographic Information Systems

- Spatial information requires methods and tools that can deal with spatial properties.
- To do this we need to be able to:
  - Collect data that represents our phenomena of study
  - Store this data in a way that we can access it and interact with it
  - Conduct sound analyses on our data
  - Present our results with accuracy and precision to create information

# Spatial modelling and digital representation



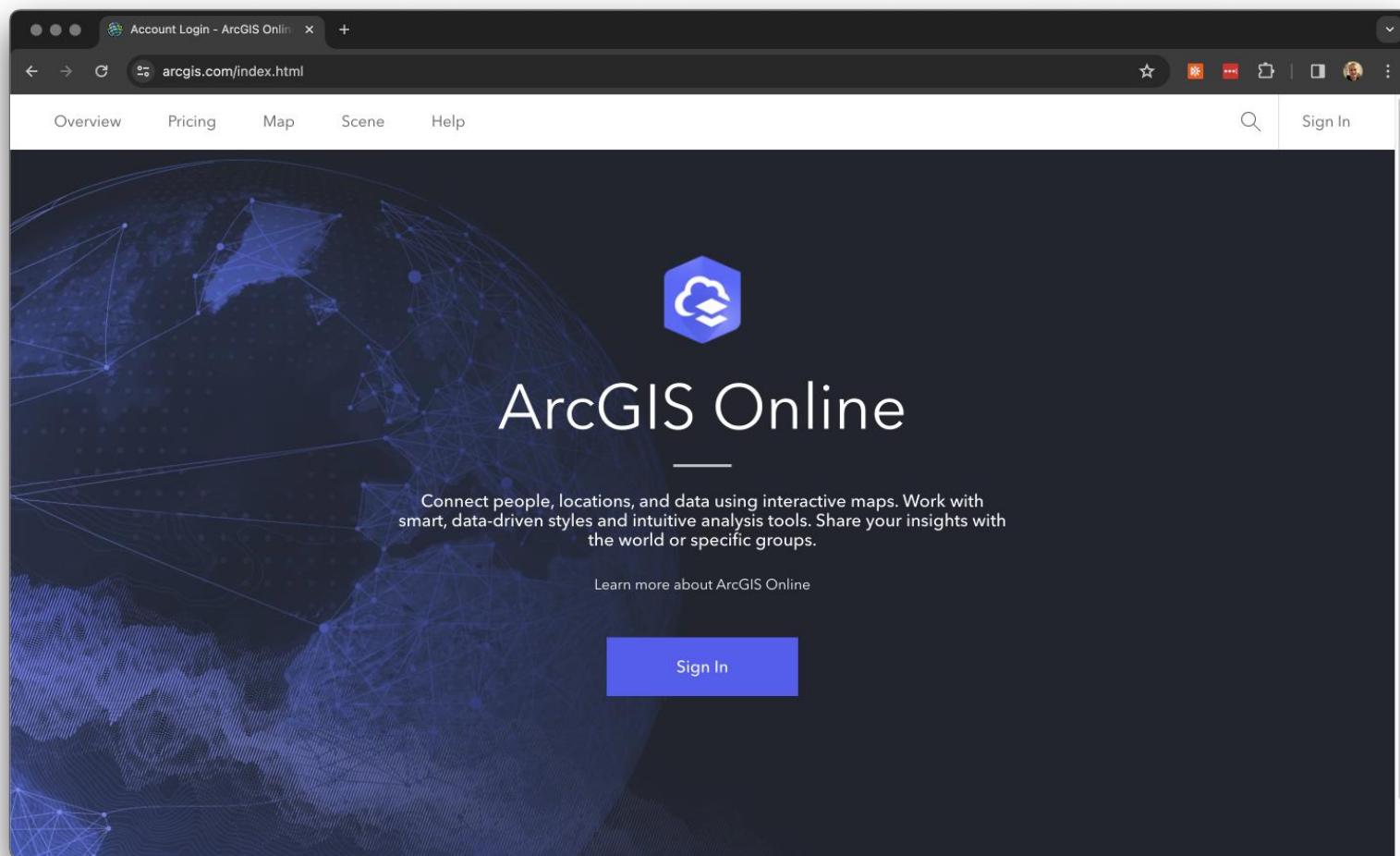
# Spatial modelling and digital representation



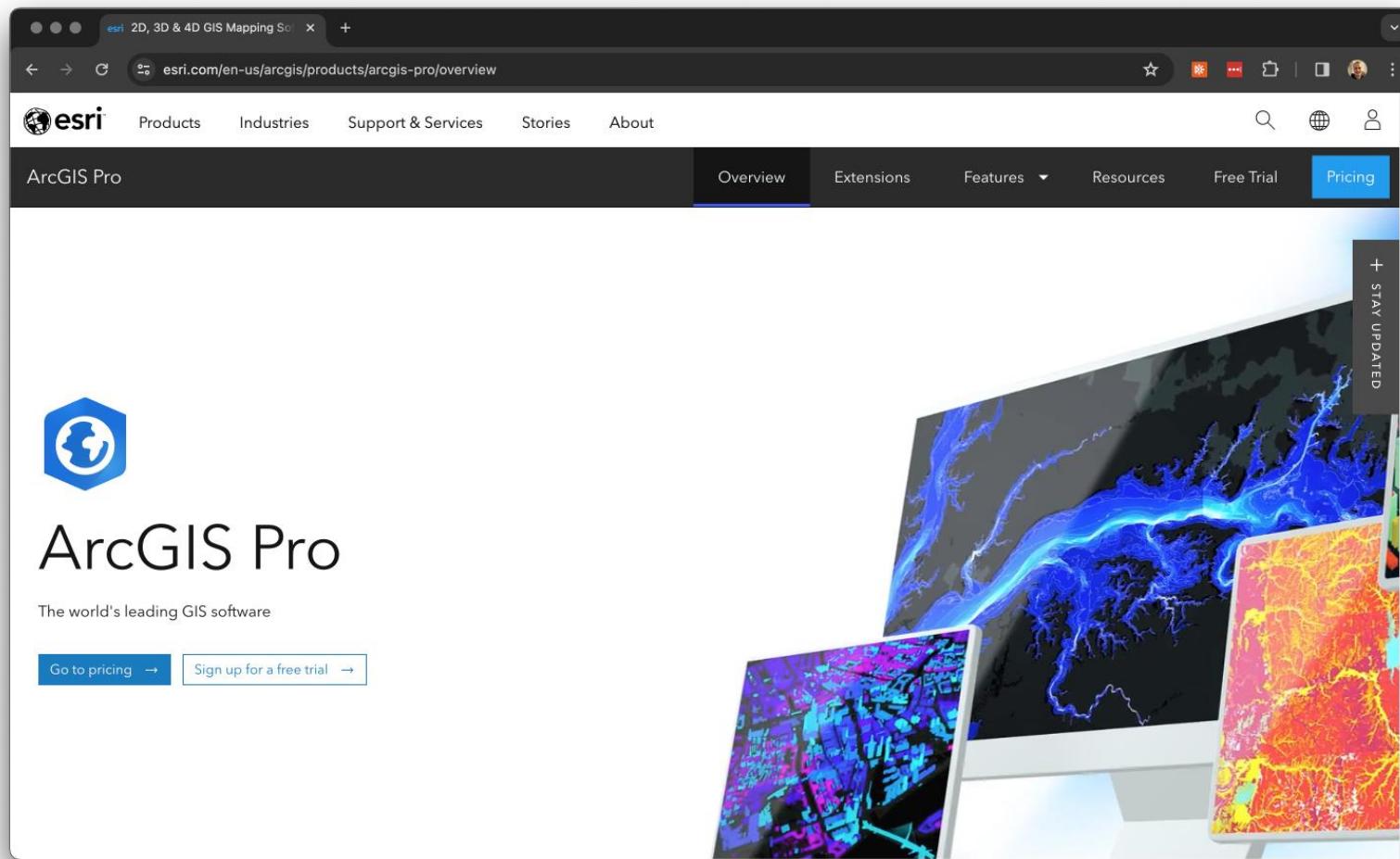
# Geographic Information Systems

- GI systems help us to manage spatial data: organisation, storage, access and retrieval, and manipulation.
- We have increasingly changing expectations from these software interfaces and our demands from GI science and systems.

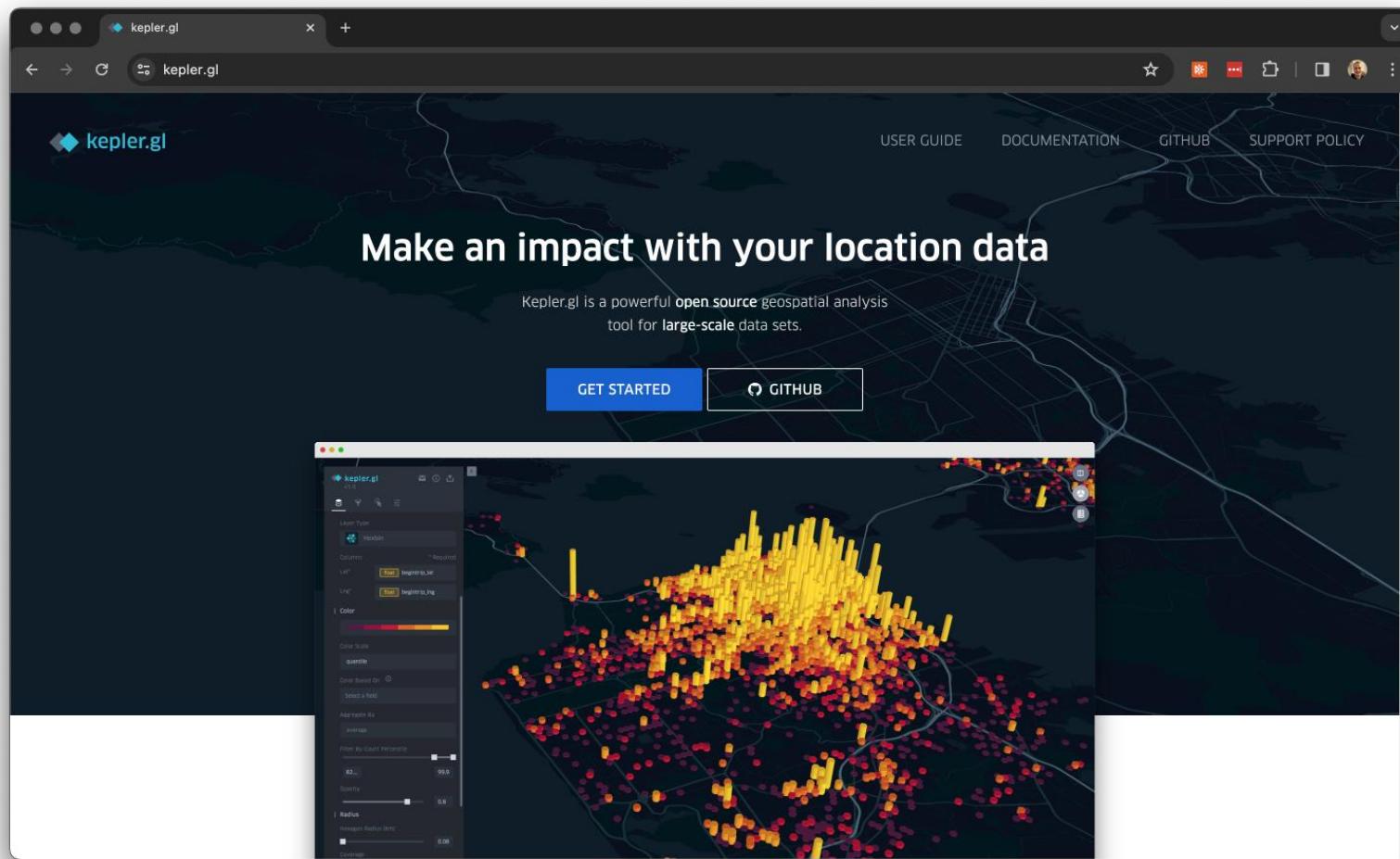
# Geographic Information Systems



# Geographic Information Systems



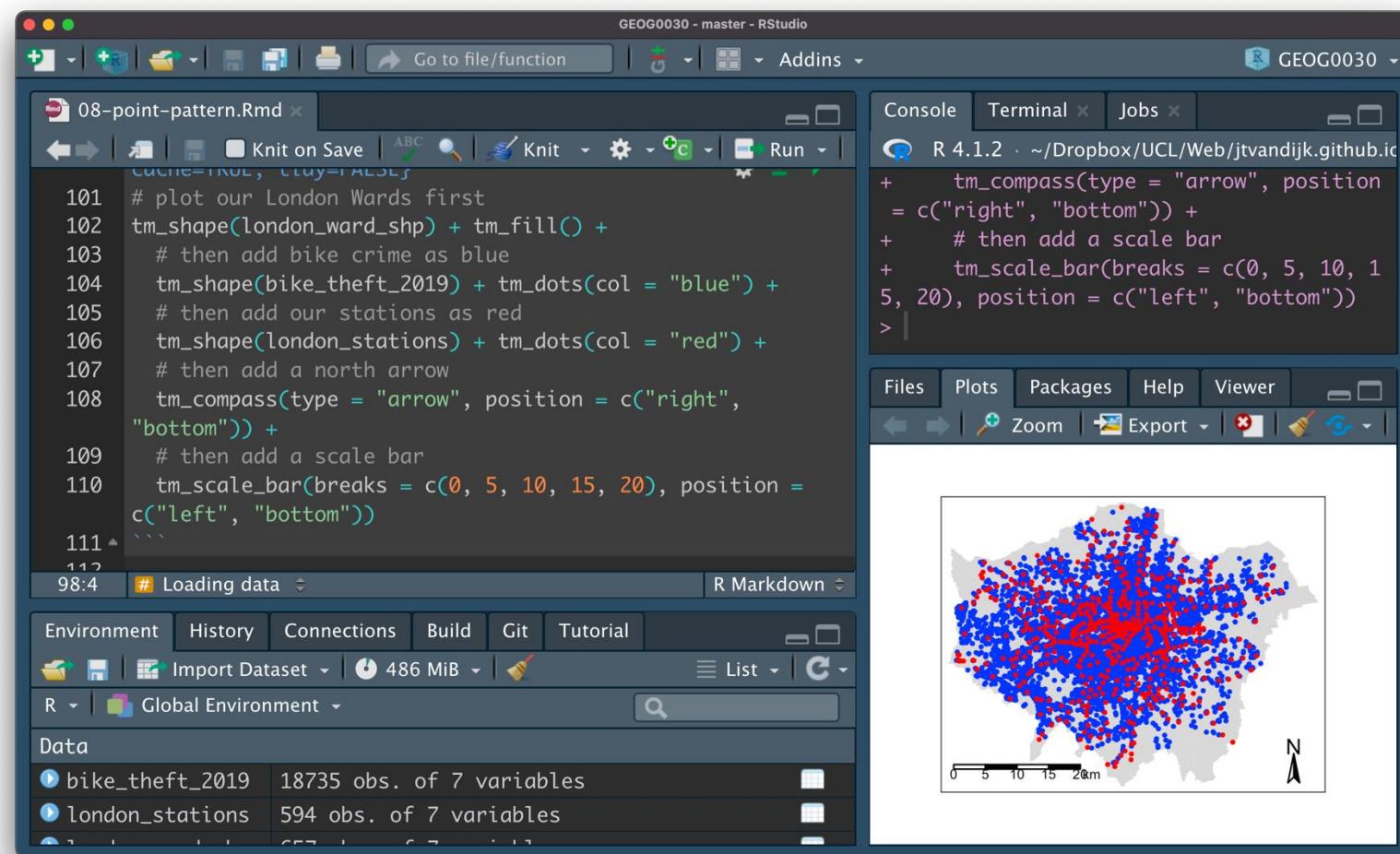
# Geographic Information Systems



# Geographic Information Systems



# Geographic Information Systems



Spatial analysis

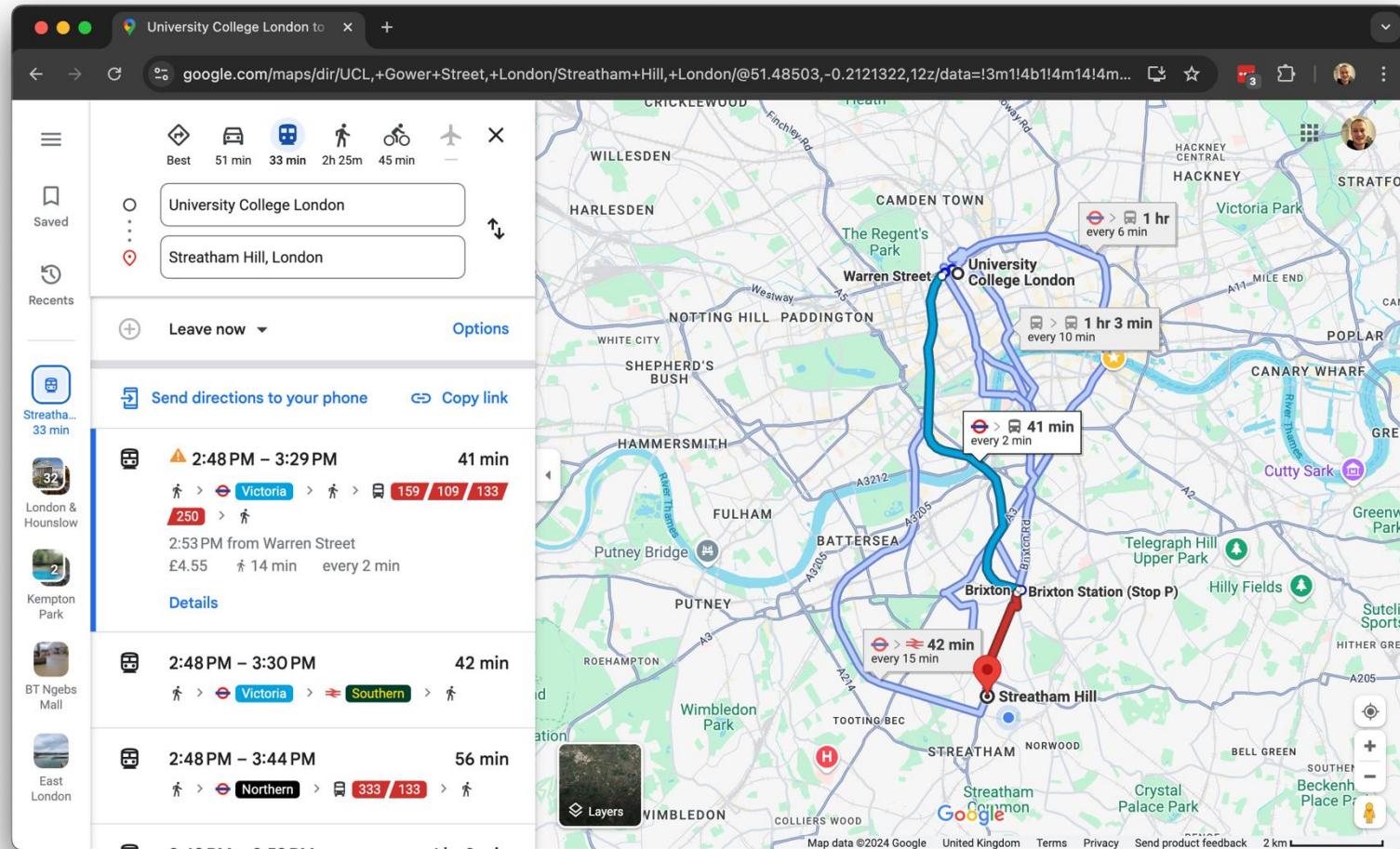
# Supermarkets around Brixton

A screenshot of a Google Maps search results page for "supermarket" in Brixton, London. The map shows the Brixton area with several supermarket locations marked by red icons with shopping carts. The results list includes:

- Tesco Superstore**: 3.7 stars (529 reviews), £ price range, Supermarket at 13 Acre Ln. Open - Closes 11 pm. Contact: 0345 677 9081.
- Sainsbury's**: 4.1 stars (1,689 reviews), ££ price range, Supermarket at 2 Tulse Hill. Open - Closes 11 pm. Contact: 020 3126 7399.
- Lidl**: 4.2 stars (2,555 reviews), £ price range, Supermarket at 189 Clapham Rd. Open - Closes 10 pm. Contact: 020 3966 5566.
- Tesco Express**: 3.4 stars (39 reviews), £ price range, Supermarket at 128 Herne Hill. Open - Closes 11 pm. Contact: 020 7226 0506.

The map also shows other local businesses like Iceland Supermarket, Valley Food & Wine, Budgens Supermarket, Nisa Local, and Super Save. The interface includes a sidebar with saved and recent locations, and a top bar with filters for Rating, Hours, and All filters.

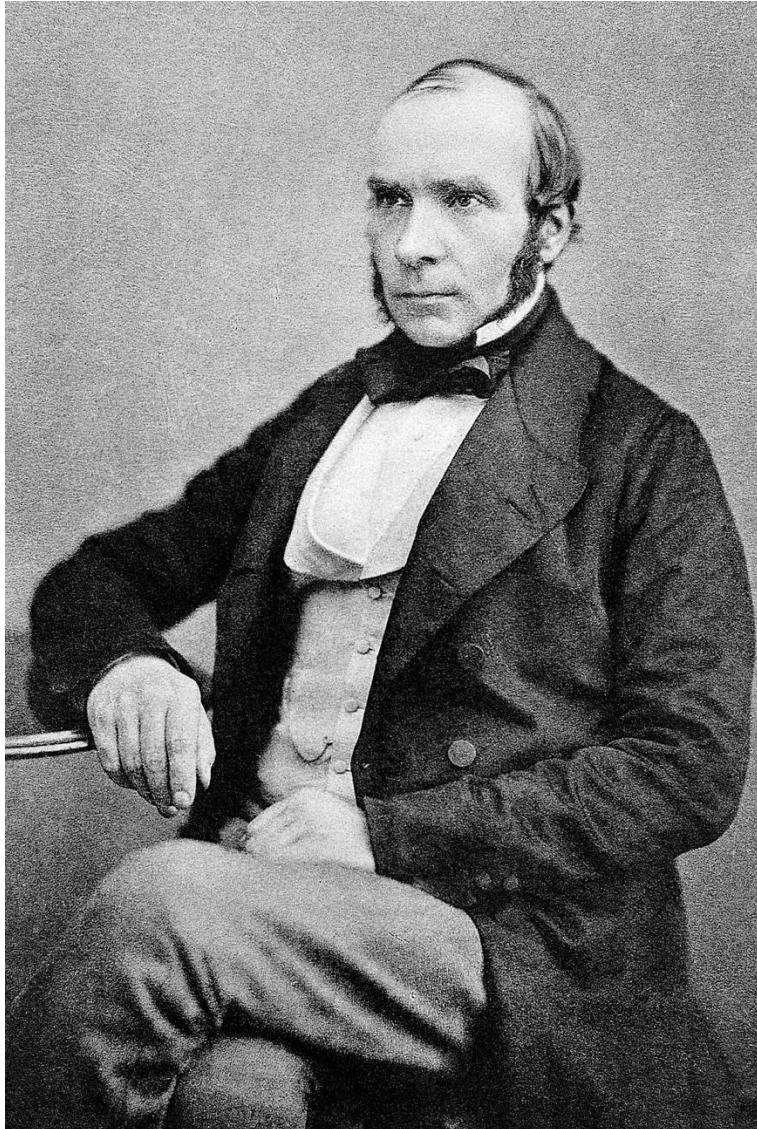
# Finding your way across the river



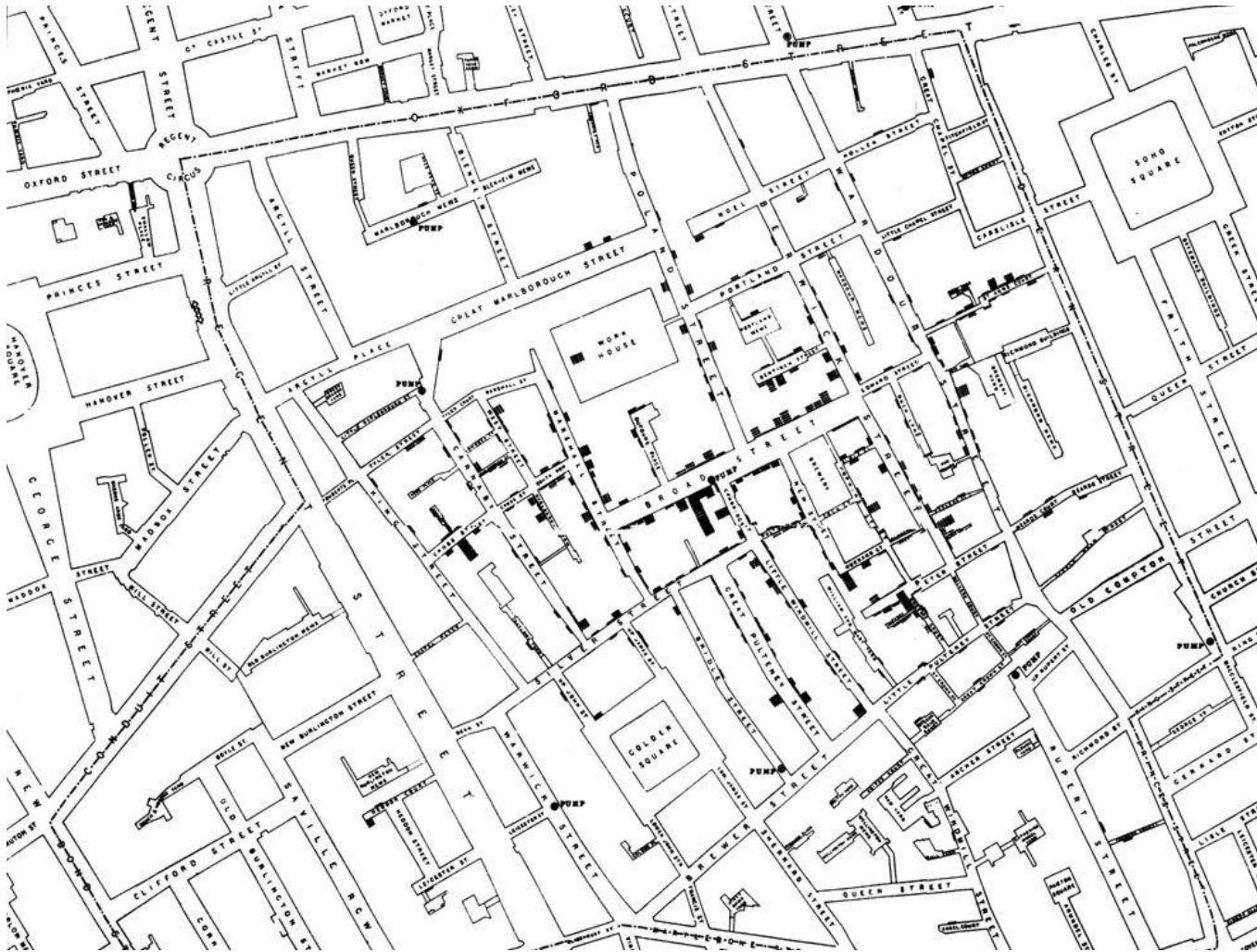
# Spatial analysis

- We can use GIScience and GISystems to convert spatial data into actionable information by quantifying elements such as distributions and spatial processes.

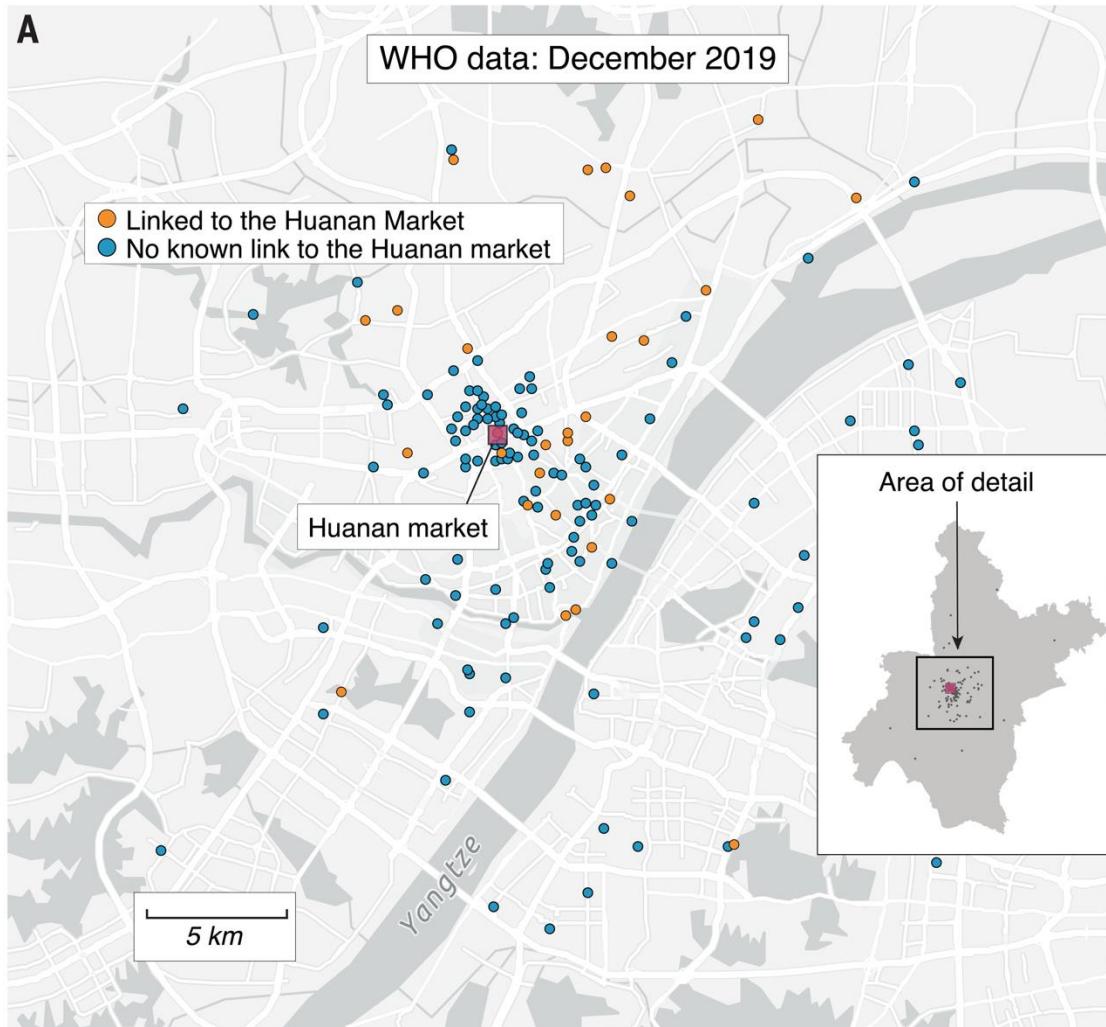
# Spatial analysis



# Spatial analysis



# Spatial analysis



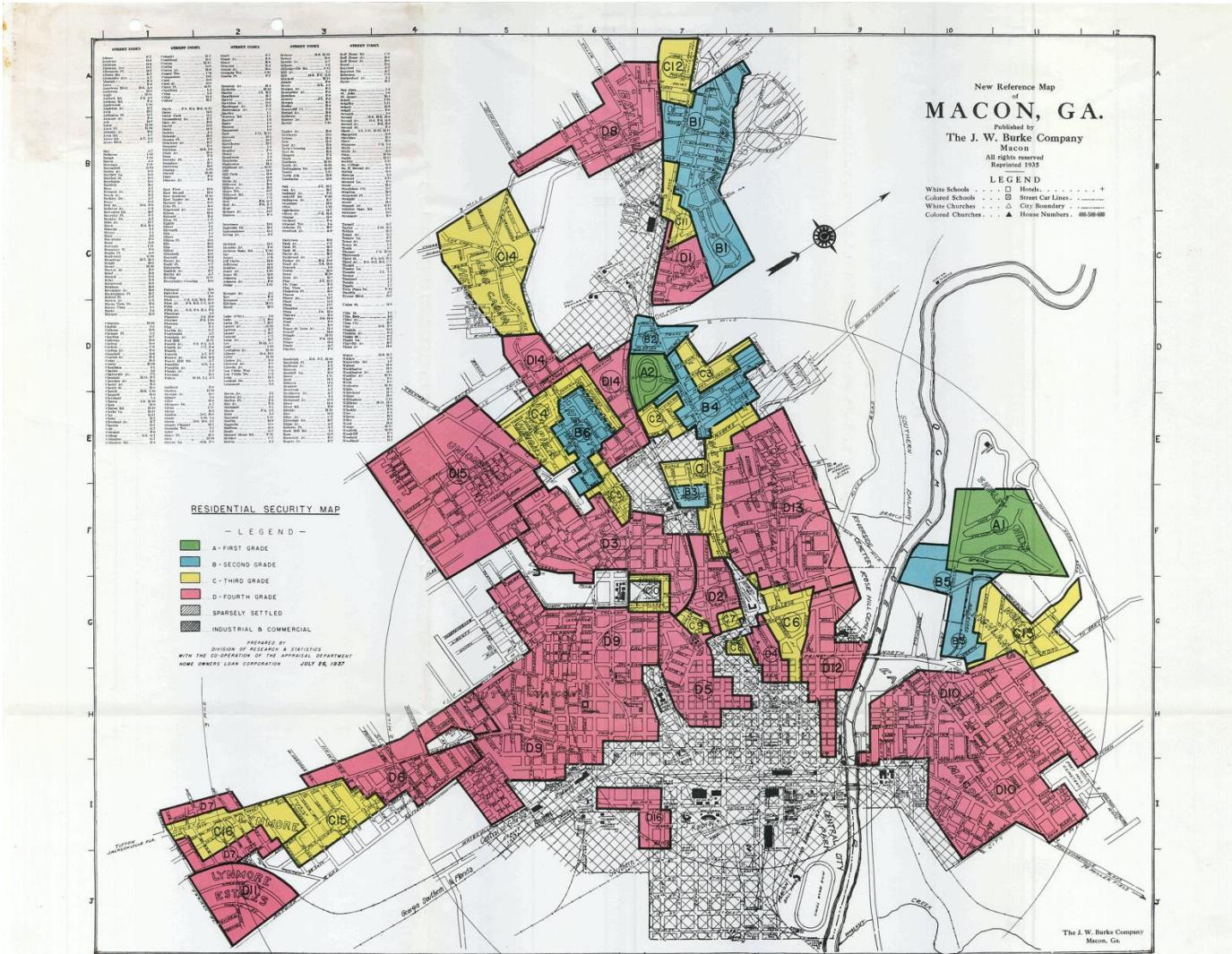
Worobey *et al.* 2022

# Spatial analysis

Ultimately, the purpose of spatial analysis is to seek explanations for patterns of human behaviour through its spatial expression in terms of mathematics and geometry in both geographic and non-geographic spaces.

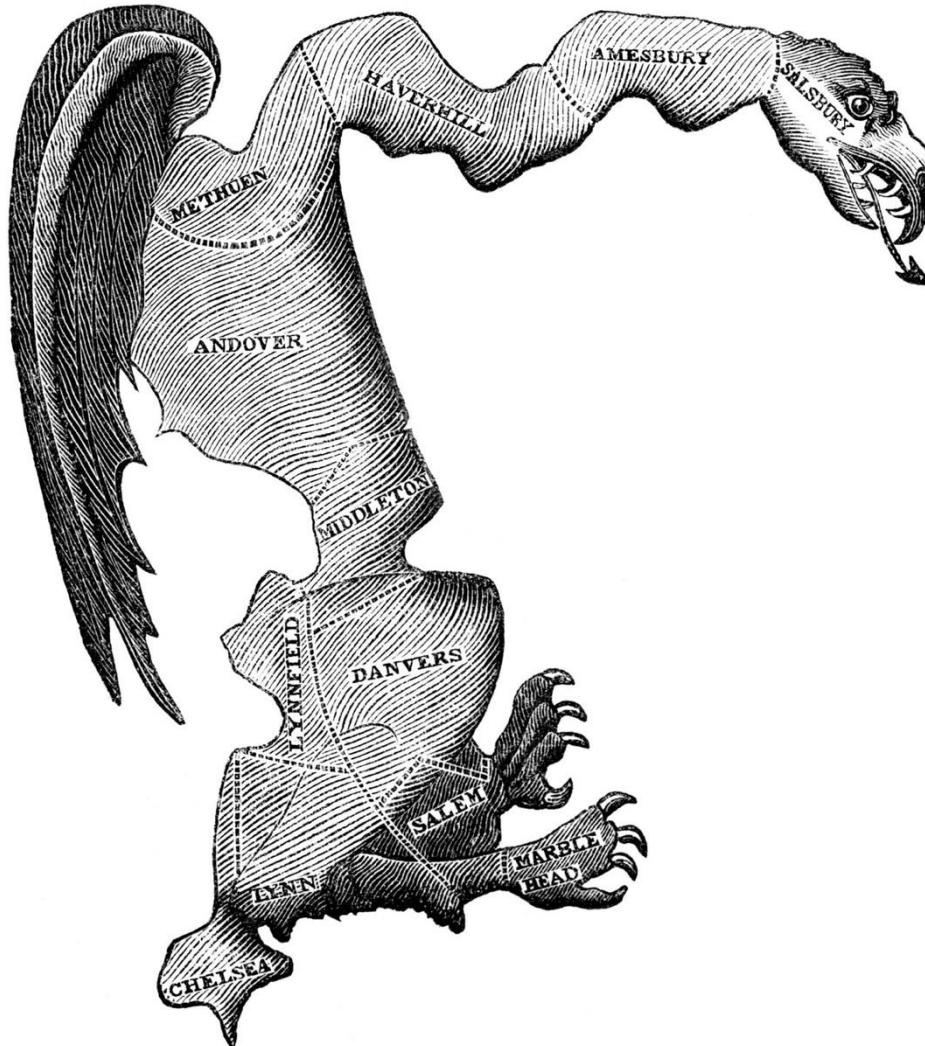
Neutrality

# Neutrality



Washington Post. 2018. Redlining was banned 50 years ago. It's still hurting minorities today. [Online] <https://www.washingtonpost.com/news/wonk/wp/2018/03/28/redlining-was-banned-50-years-ago-its-still-hurting-minorities-today/>

# Neutrality



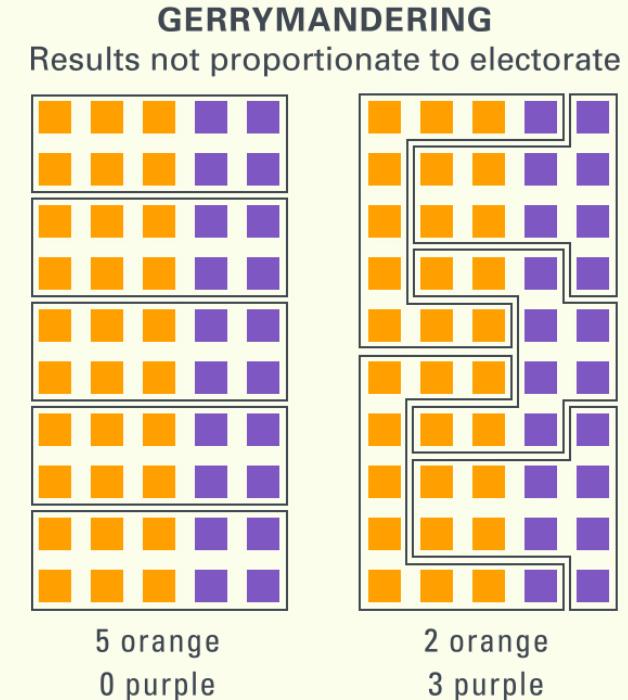
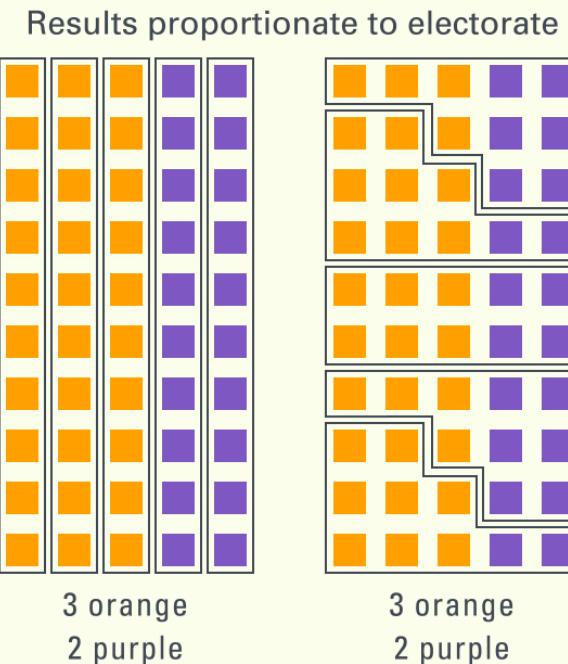
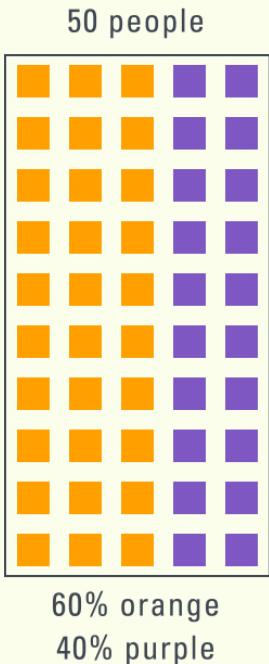
Encyclopaedia Britannica, Inc.. Gerrymandering. [Online]  
<https://www.britannica.com/topic/gerrymandering>

# Neutrality

## GERRYMANDERING

How differently drawn district maps produce different electoral results

### FOUR WAYS TO DIVIDE 50 PEOPLE INTO 5 DISTRICTS:



© Encyclopædia Britannica, Inc.

# Neutrality

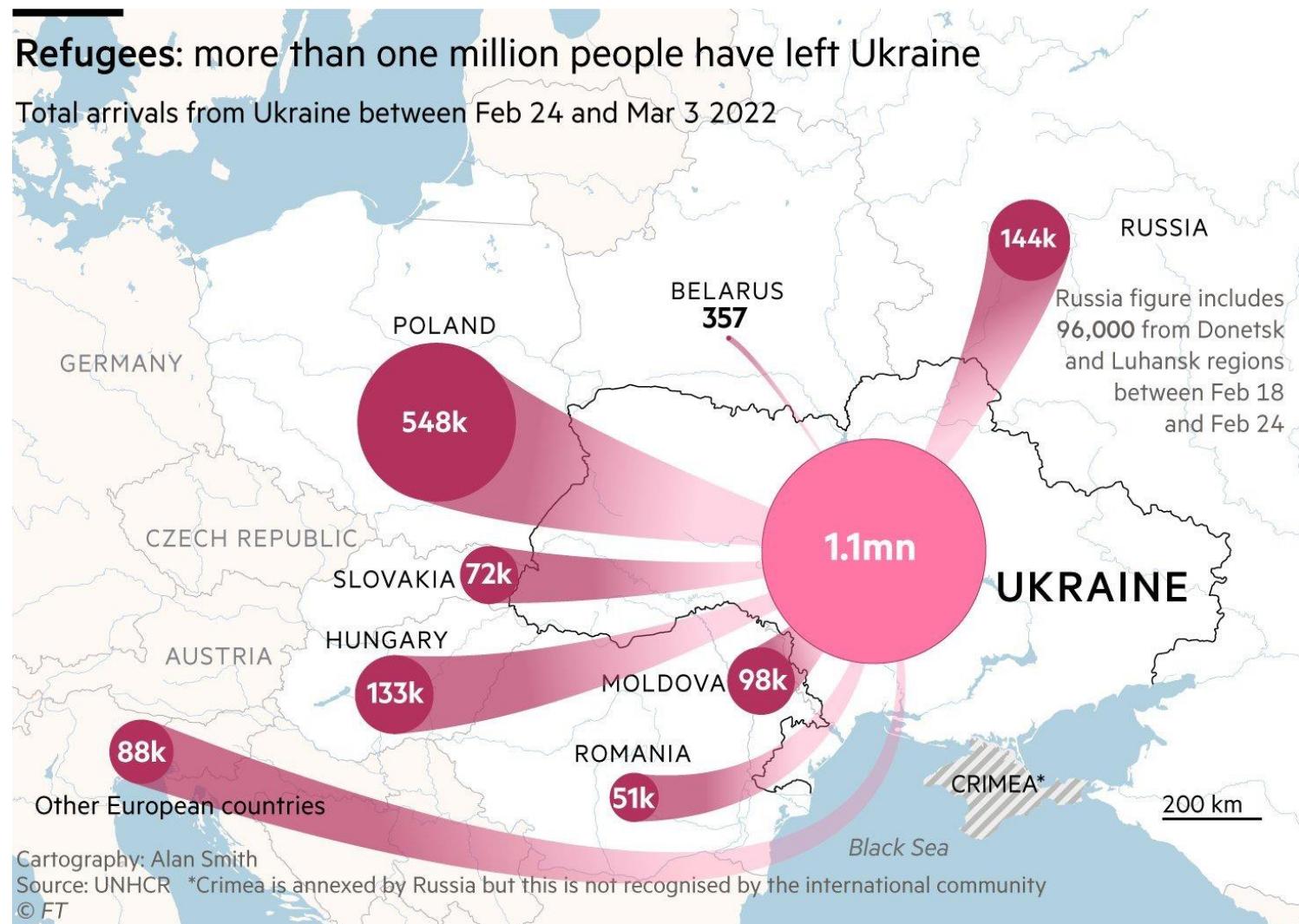
Which countries are Ukrainians fleeing to?



BBC

James Cheshire. More than arrows [Online]  
<https://jcheshire.com/resources/more-than-arrows/>

# Neutrality



James Cheshire. More than arrows [Online]  
<https://jcheshire.com/resources/more-than-arrows/>

# Neutrality

## Mass exodus

Refugee arrivals from Ukraine, Feb 24th-Mar 2nd 2022

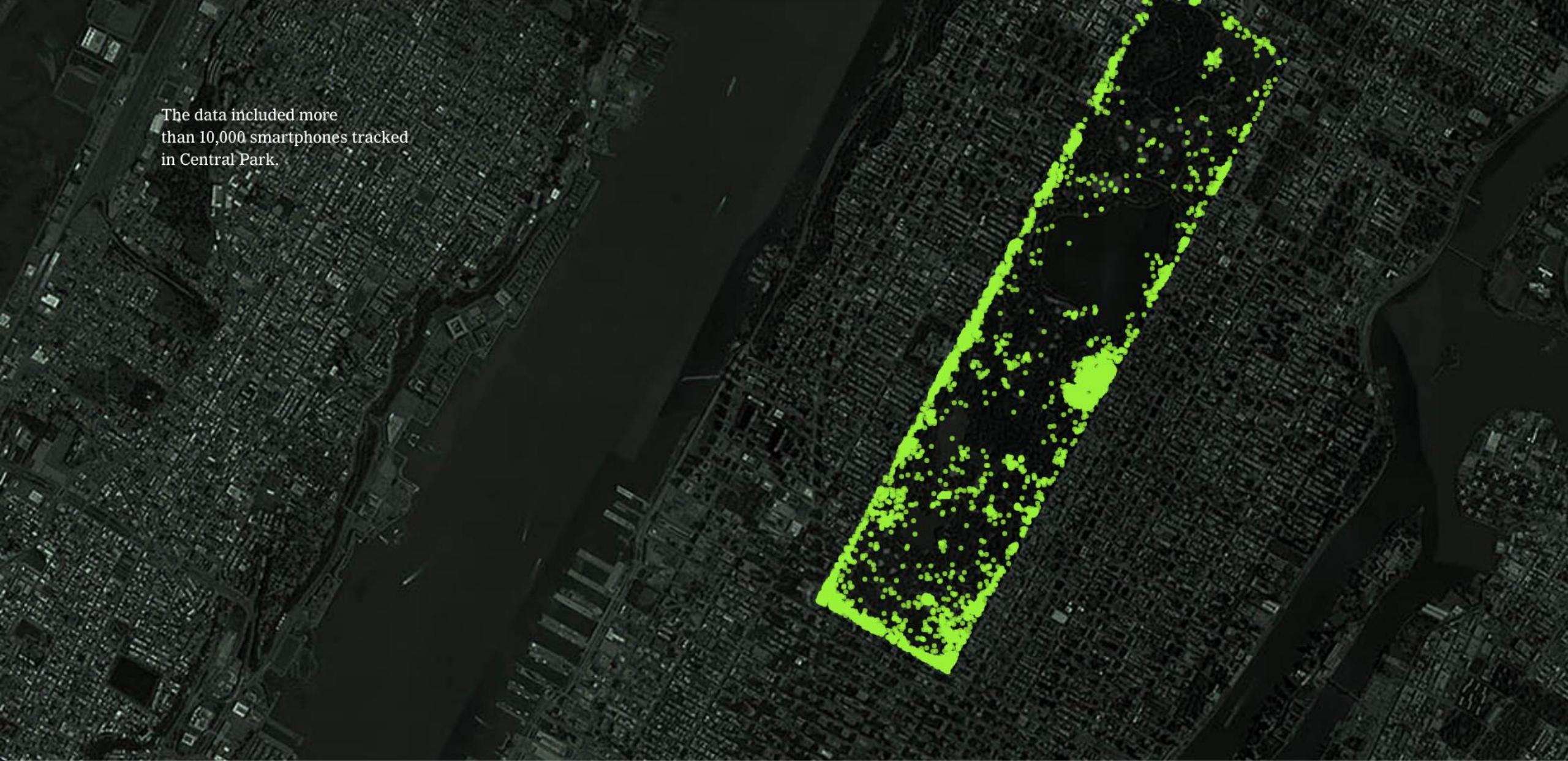


Source: UNHCR

James Cheshire. More than arrows [Online]  
<https://jcheshire.com/resources/more-than-arrows/>

Privacy

# The Privacy Project



The data included more than 10,000 smartphones tracked in Central Park.

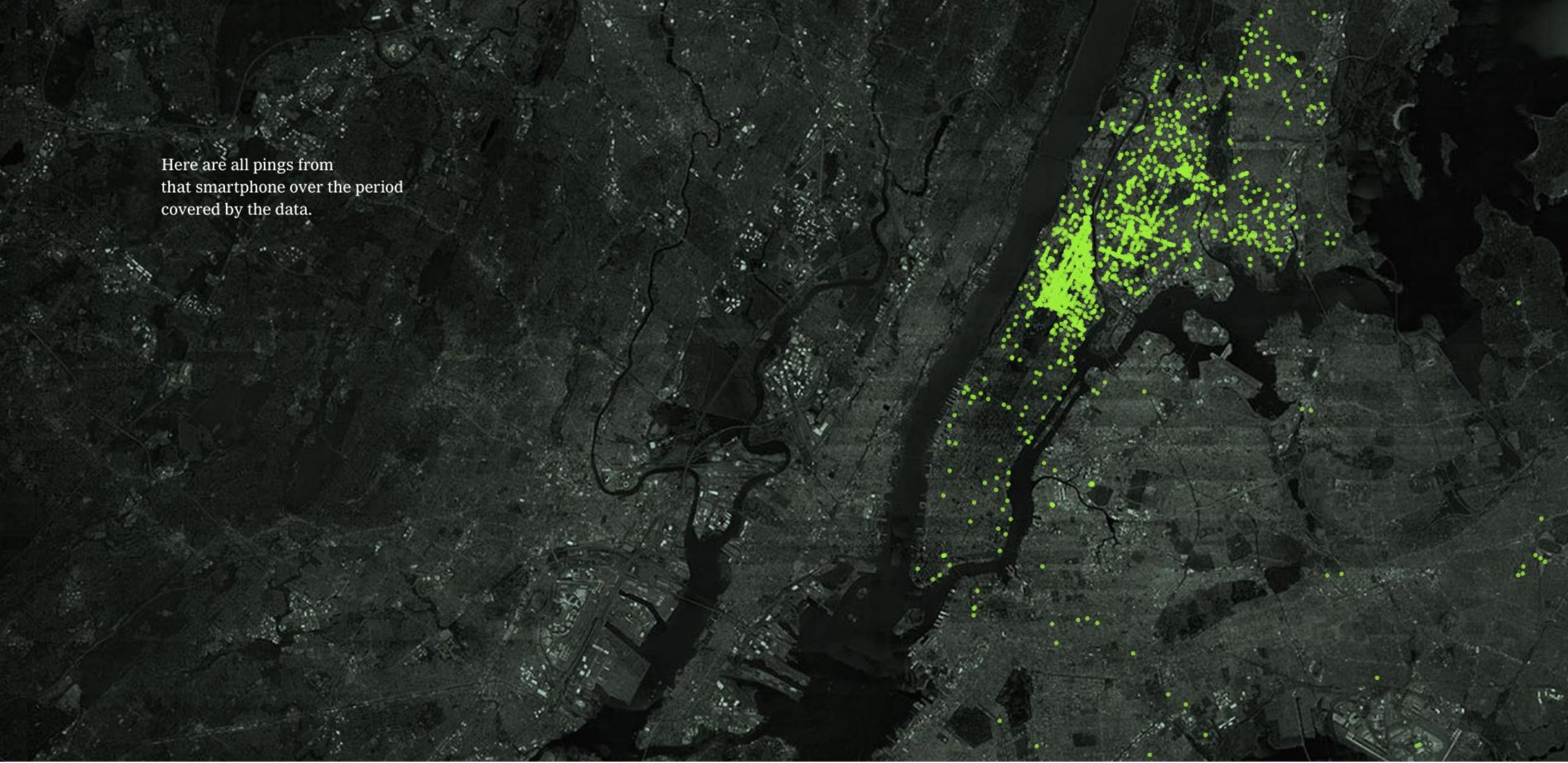
# The Privacy Project



Aerial satellite view of a dense urban area at night, showing a grid of buildings and streets. A single green dot is placed on the map, representing a single smartphone user who is isolated from the crowd.

Here is one smartphone, isolated  
from the crowd.

# The Privacy Project



Here are all pings from  
that smartphone over the period  
covered by the data.

# The Privacy Project

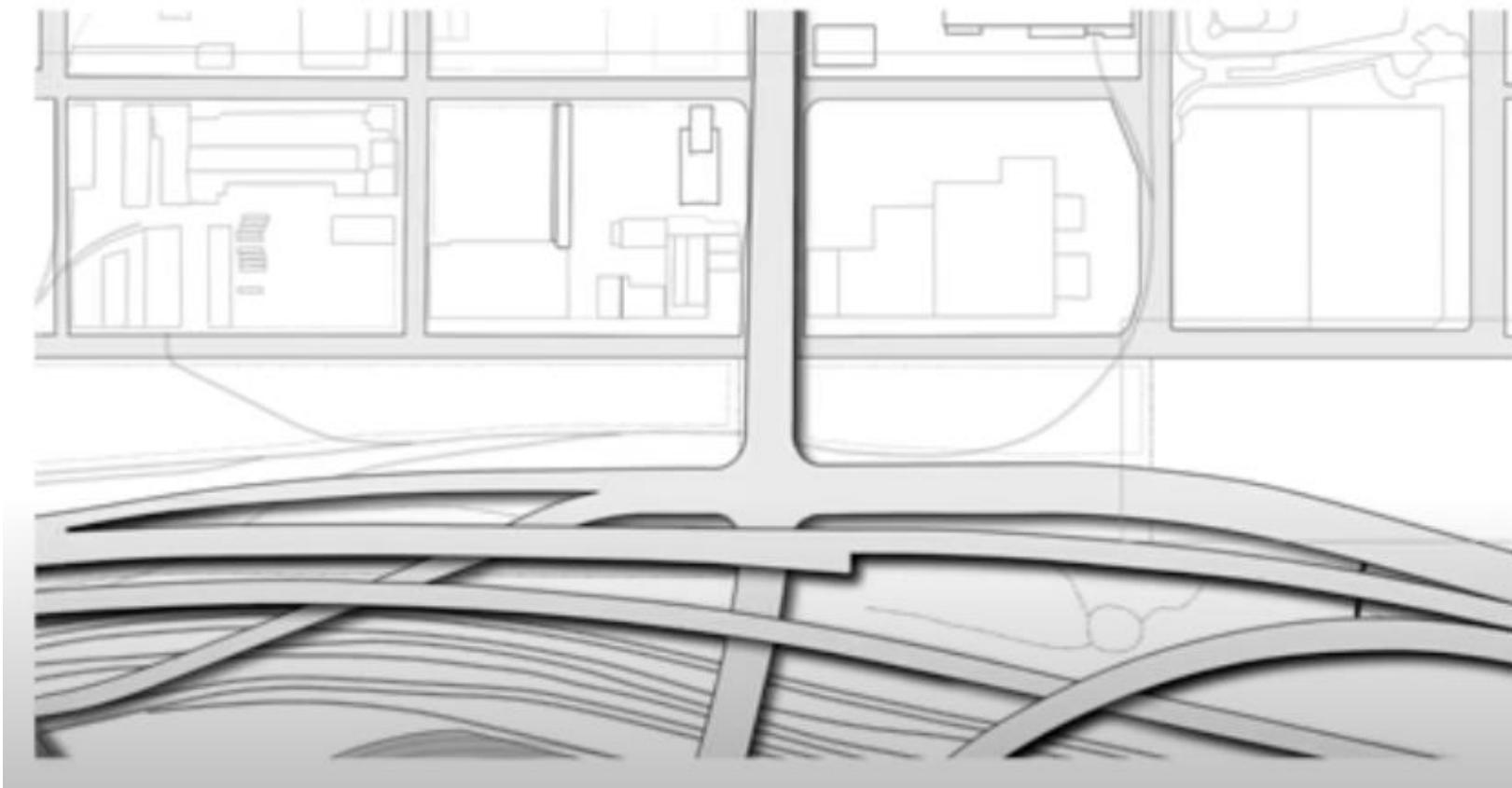


Connecting those pings reveals a diary of the person's life.

# Responses

- Critical cartography/GIS is a set of mapping practices and methods of analysis grounded in critical theory, specifically the thesis that maps reflect and perpetuate relations of power, typically in favour of a society's dominant group.
- Includes: non-cartesian representations of lived geographic spaces.

Lives not lines

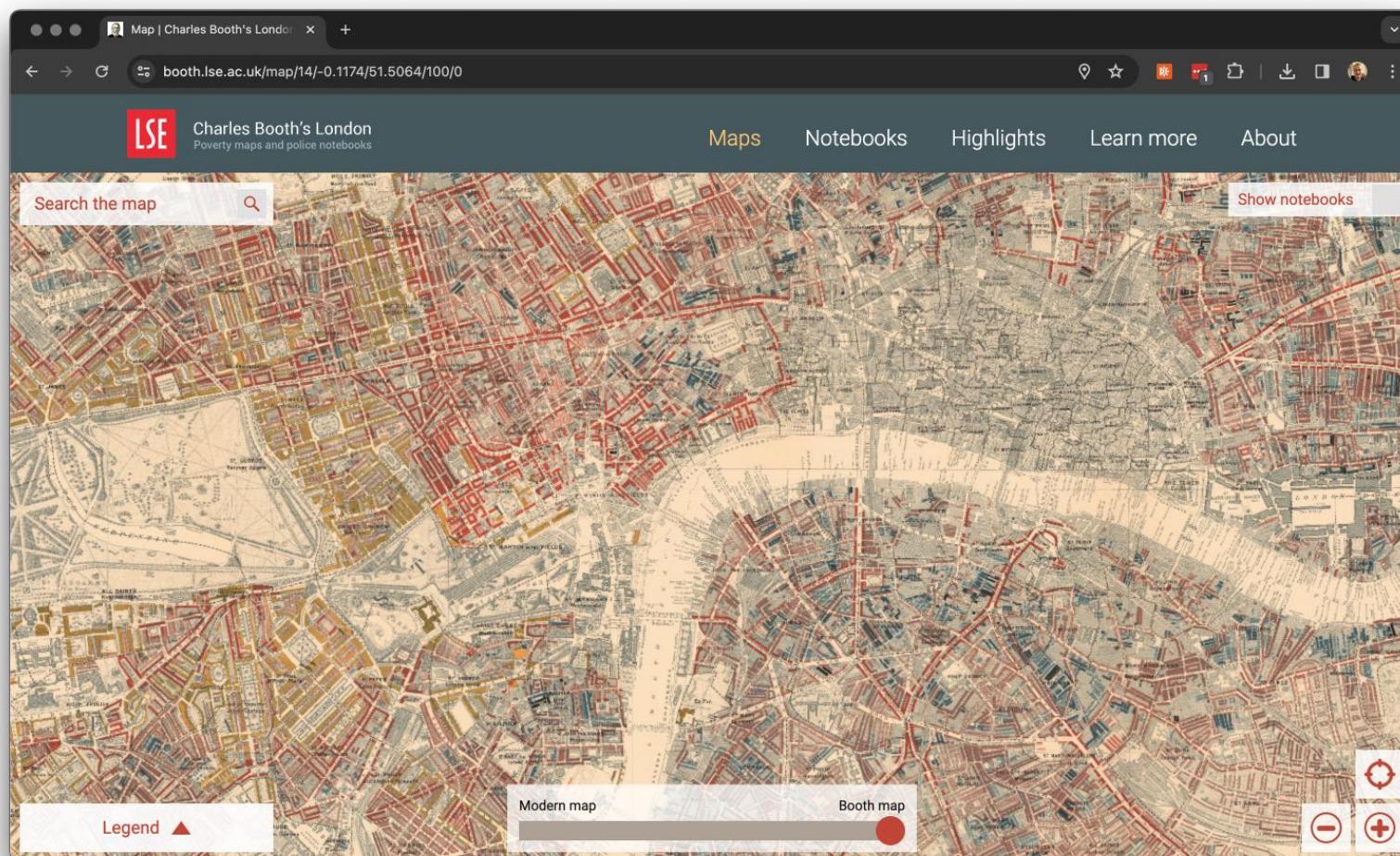


# Lives not lines

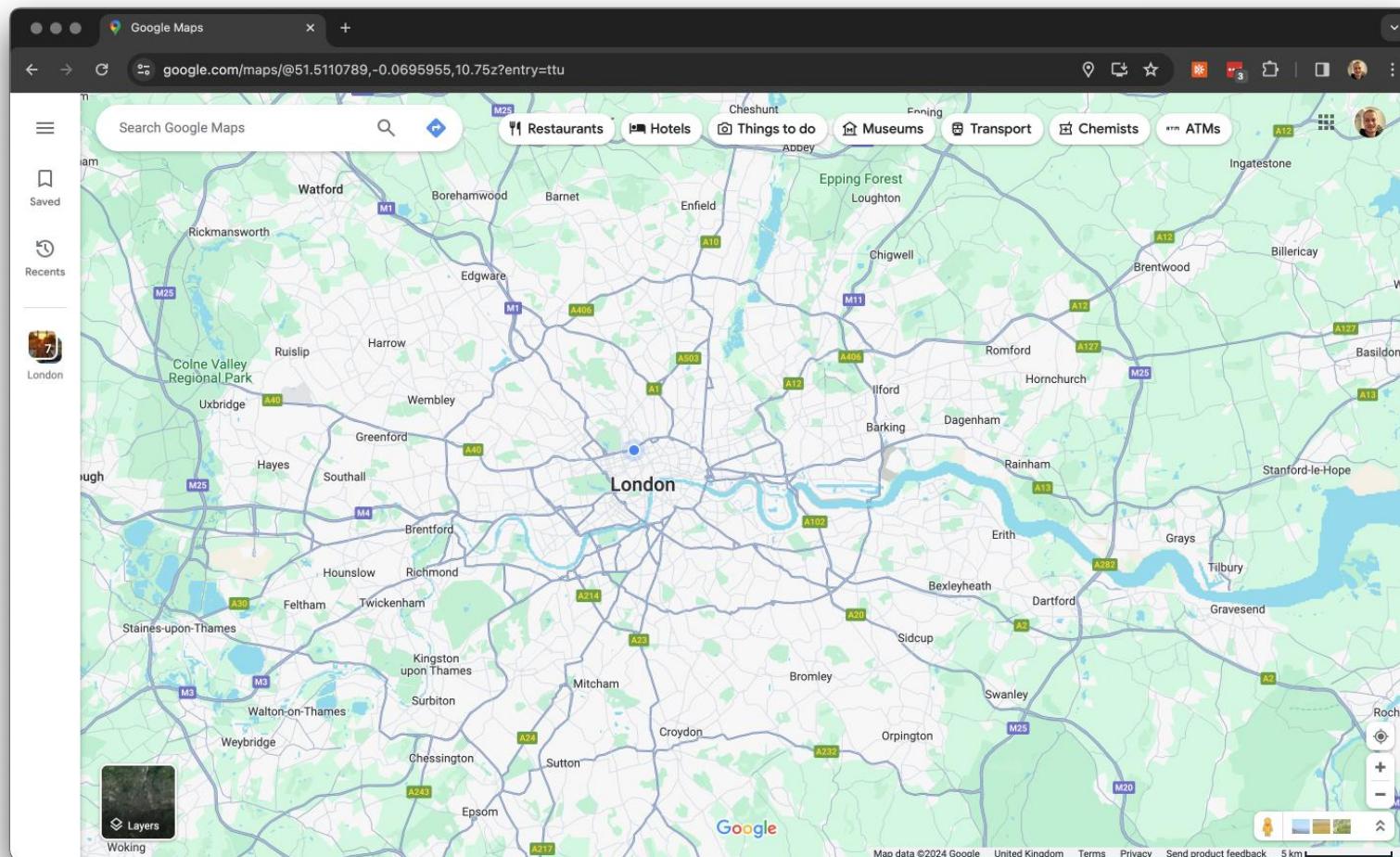


Mapping [Contemporary] London

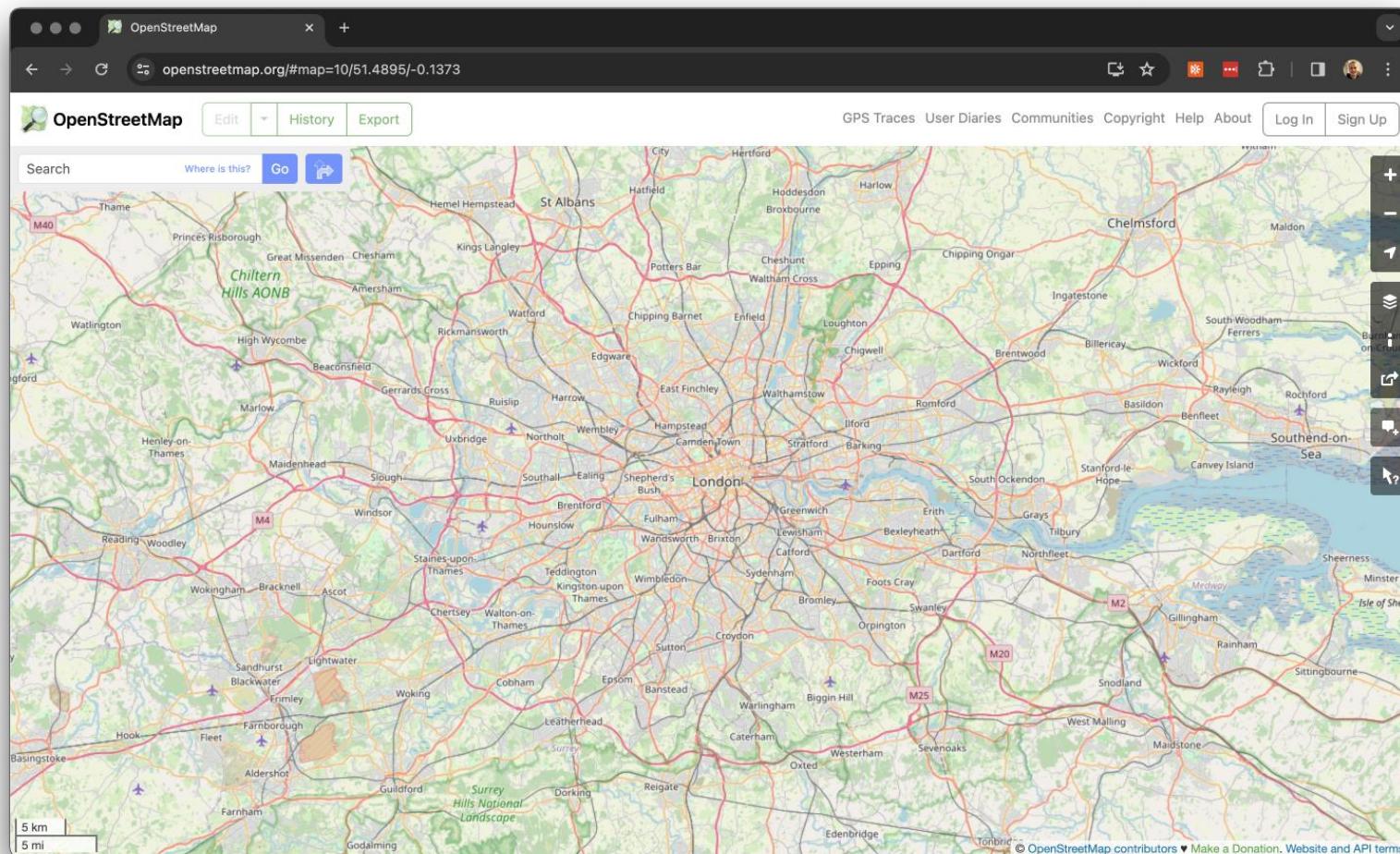
# Mapping London



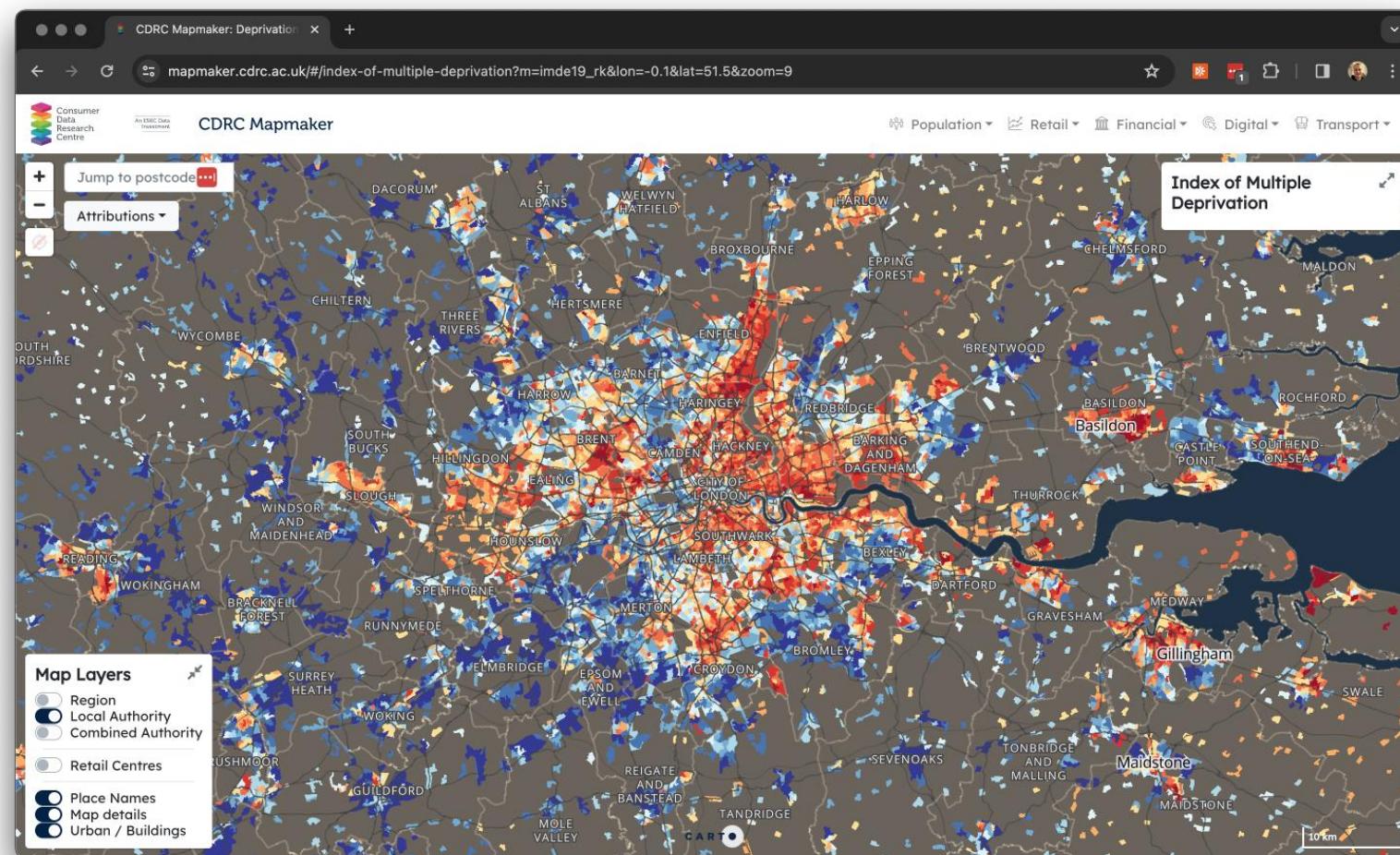
# Mapping London



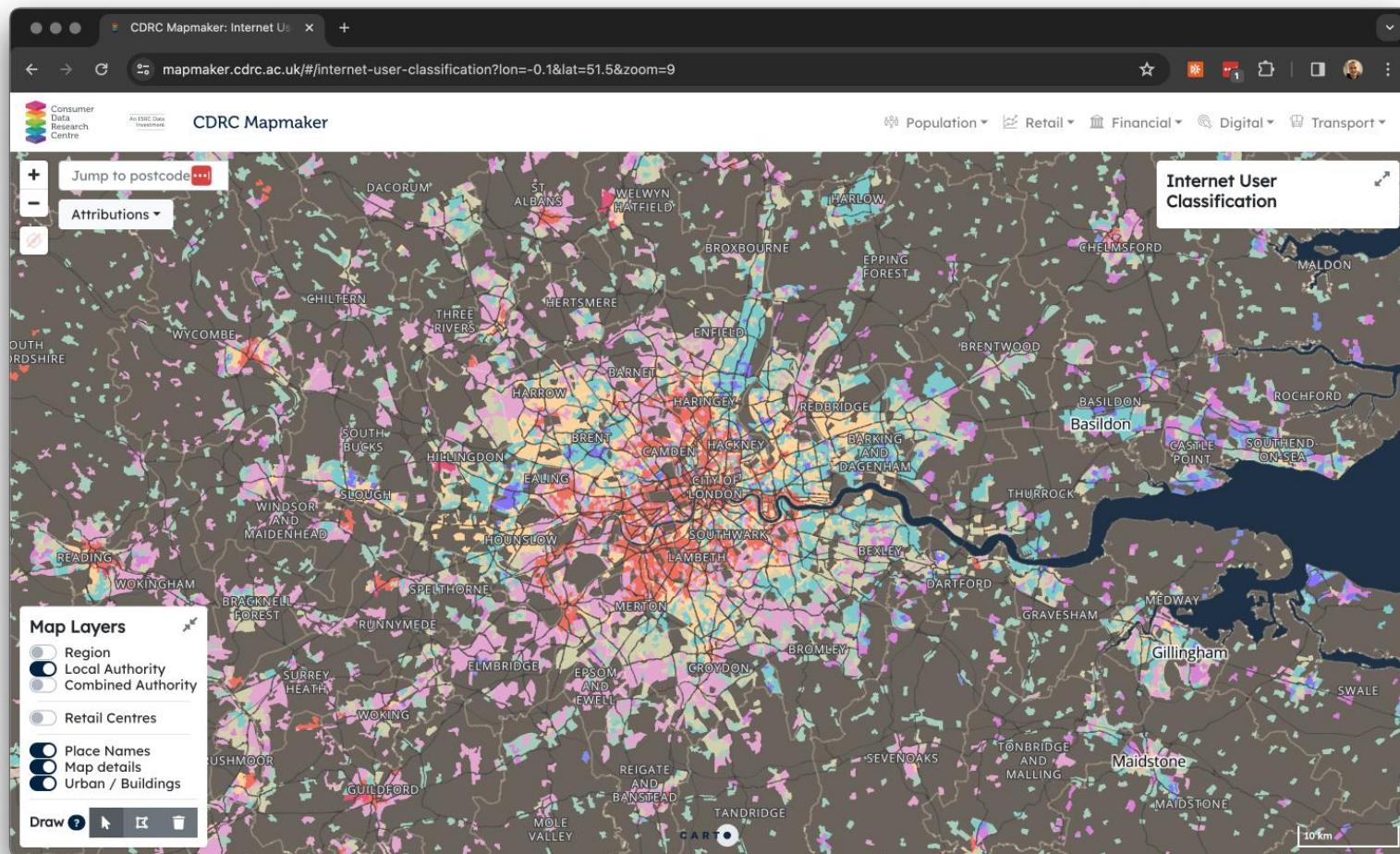
# Mapping London



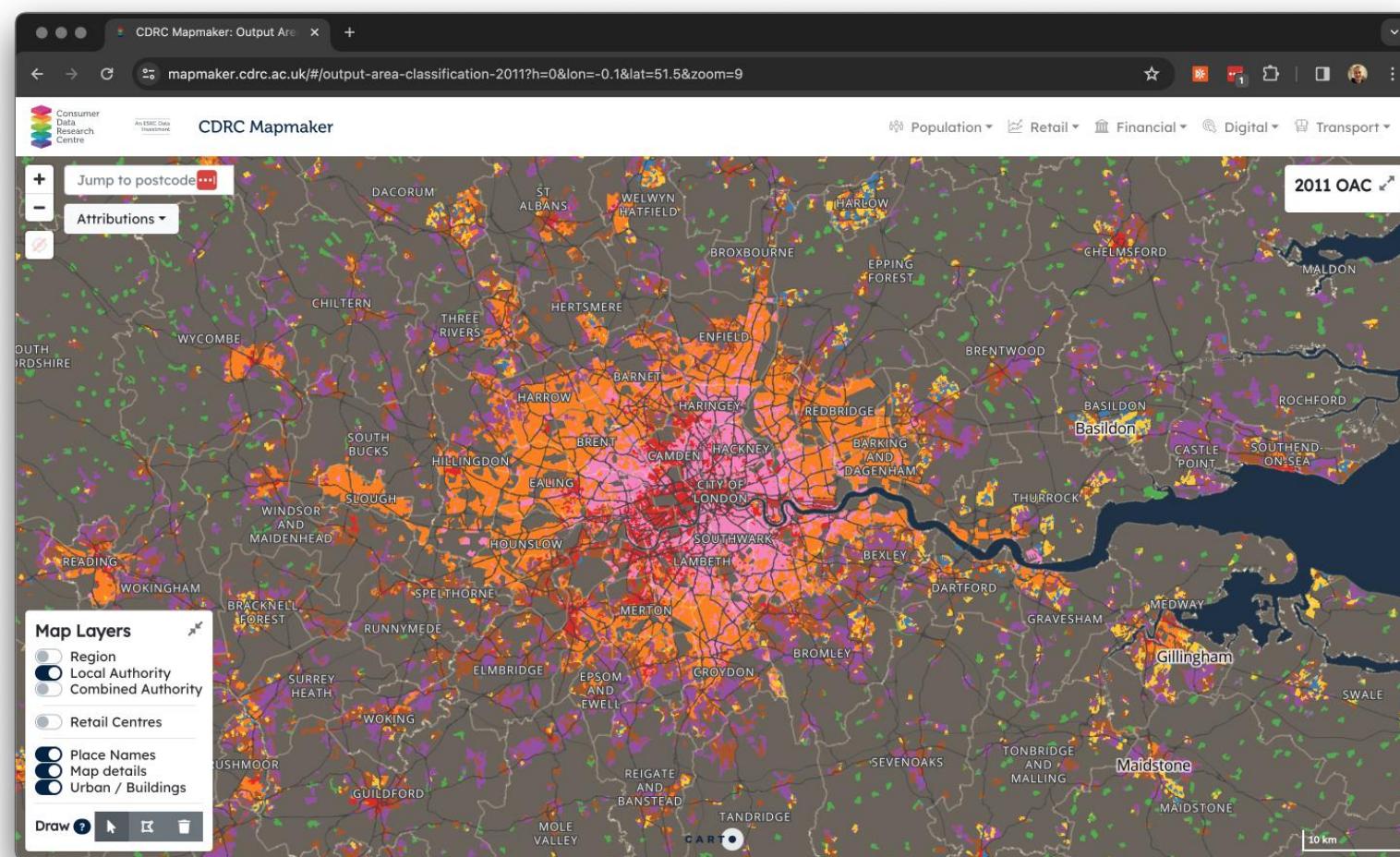
# Mapping London



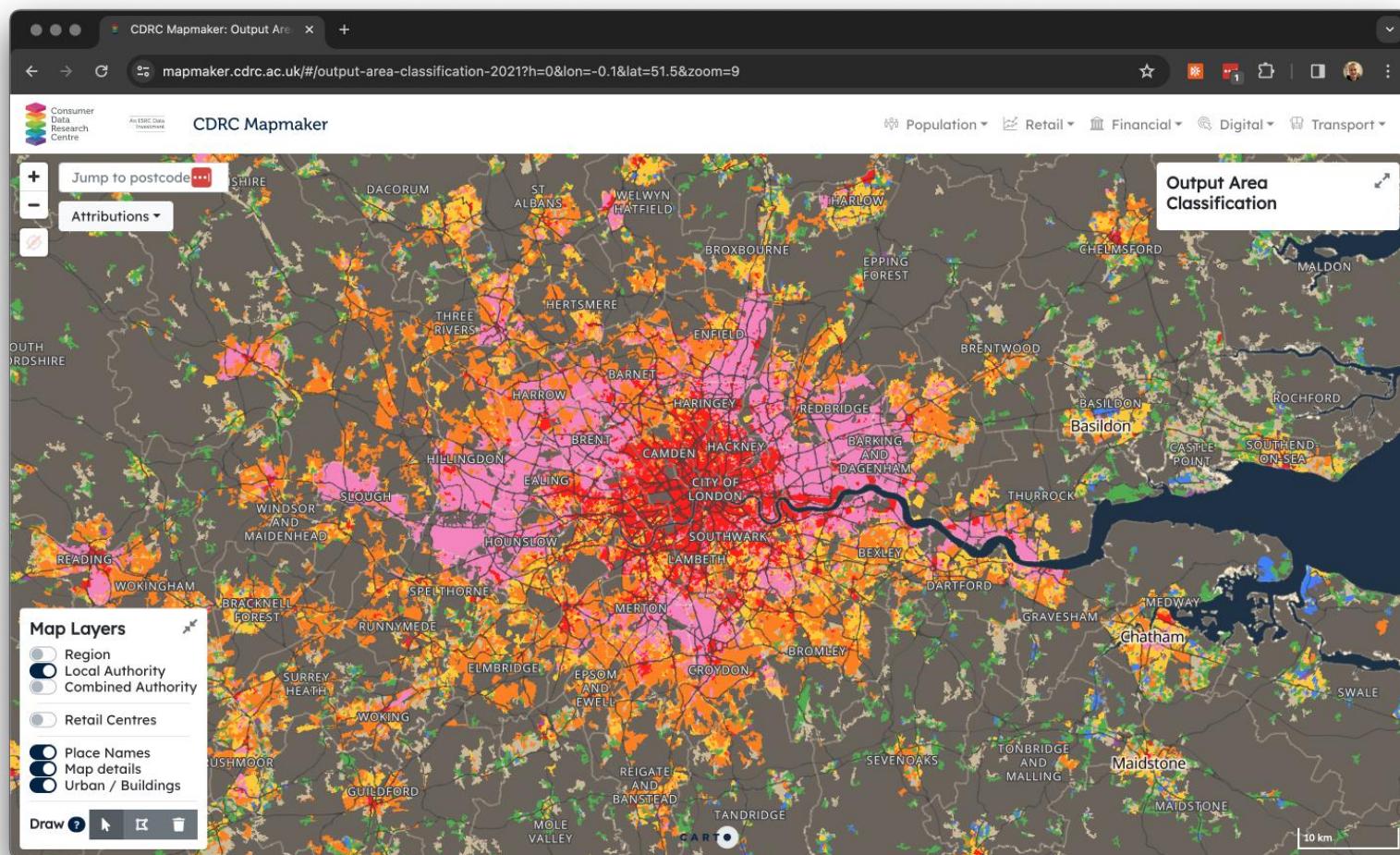
# Mapping London



# Mapping London



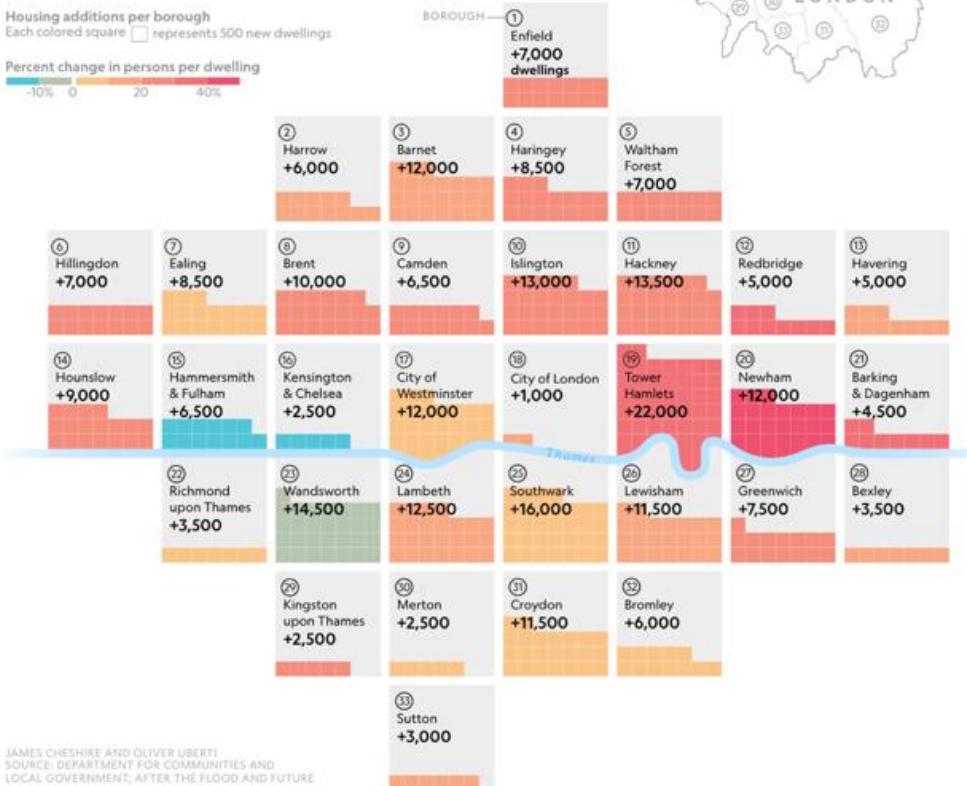
# Mapping London



# Mapping London

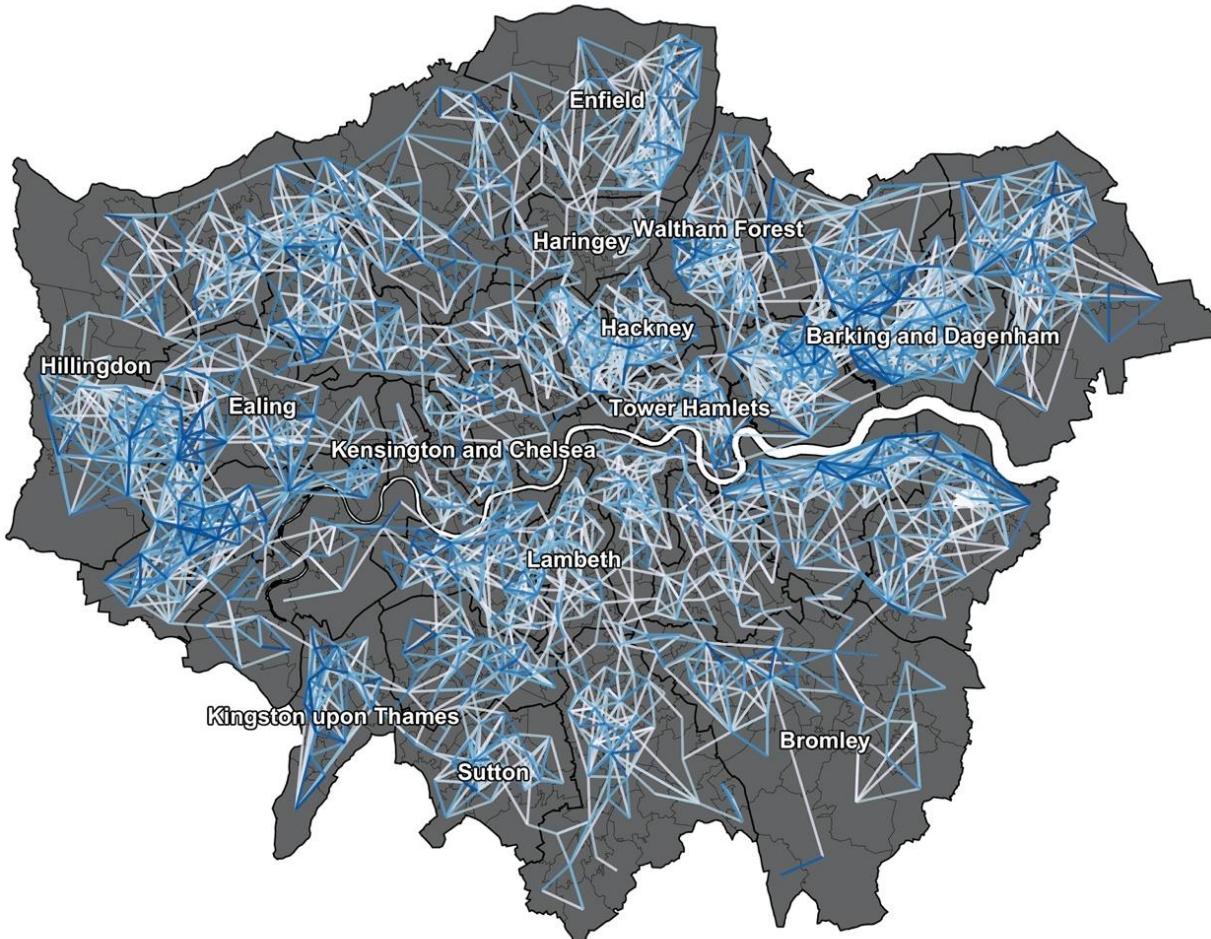
## Rising Residential Areas

London's population grew by 1.2 million between 2006 and 2016. Tower Hamlets is the fastest-growing borough, particularly around Canary Wharf, Blackwall, and Cubitt Town on the Isle of Dogs. The borough also draws a diverse group of international migrants; in the most recent census, 43 percent of its residents were born outside Britain. In boroughs with some of the highest real estate prices, such as Kensington and Chelsea, more residents are moving out than in.

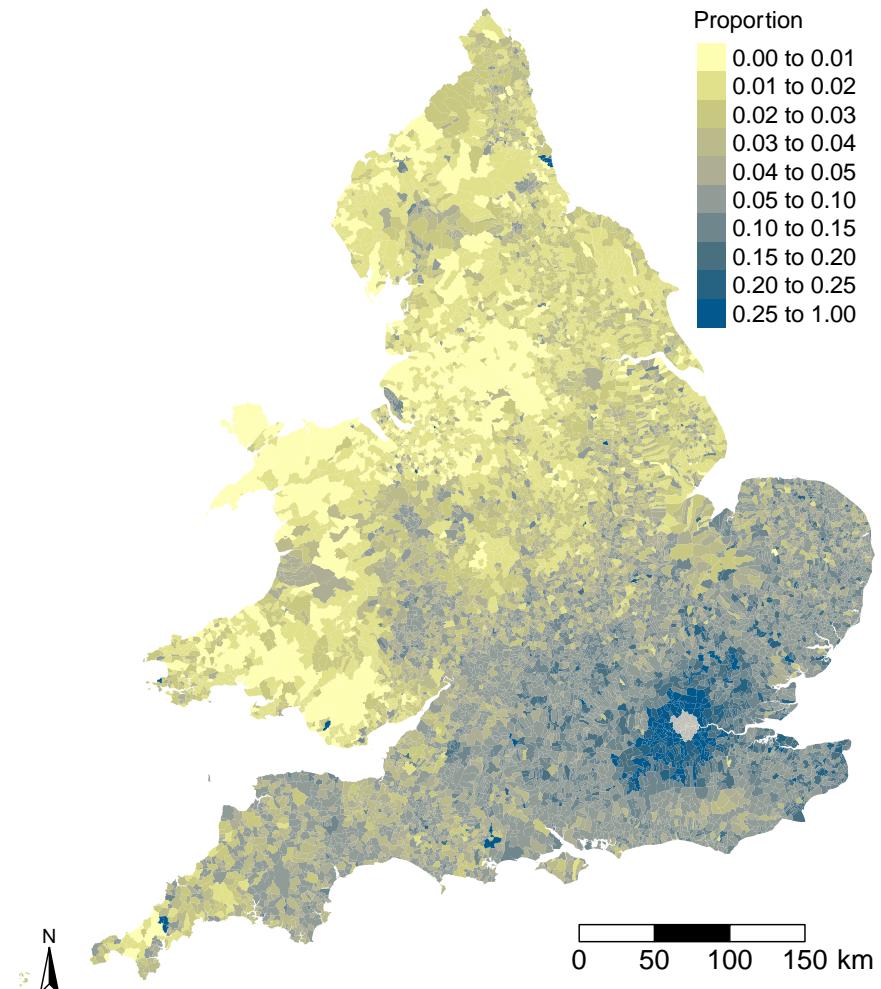


National Geographic. How. London became the centre of the world.  
<https://www.nationalgeographic.com/environment/article/london-population-city-planning>

# Mapping London



# Mapping London



Longley, P. A. Van Dijk, J. T., & Lan, T. 2021. The geography of intergenerational social mobility in Great Britain. *Nature Communications* 12: 6050.

# Conclusion

- Maps are important tools to effectively convey information.
- At least two things are required: GIScience and GISystems.
- Maps are never neutral but tell a story.
- There is no one map to rule them all.

# Practicalities

# Coming days

- Monday: Lecture
- Tuesday/Thursday: Seminar on Gentrification (details on Moodle)
- Before Friday: QGIS Computer Tutorial (independently, online)
- Friday: Field visit (1-2 sides in field notebook)

# Coming days

The screenshot shows a web browser window with the title bar "GEOG0014". The address bar displays the URL "jtvdijk.github.io/GEOG0014/00-index.html". The main content area features a large header "GEOG 0014" on the left and "Geography in the Field II" in bold text on the right. Below the header is a map of London with various colored regions. To the left, a sidebar menu includes "Welcome", "Mapping London" (which is highlighted in red), "Crime in London", "1 Data preparation", "2 Data mapping", and "3 Worksheet". On the right, a sidebar titled "On this page" lists "Geography in the Field II", "Mapping London", "Lecture notes", "Minor updates", and "Acknowledgements". A "Report an issue" link is also present.

## Geography in the Field II



### Mapping London

It is an exciting time to be a quantitative geographer in London. The city is producing more data than ever, and maps, graphics, and infographics about London are everywhere. With more people living here than at any point in its history, geographers have a unique opportunity to use these new data sources for research. At the same time, we can approach the information with a critical eye, thanks to the insights we have gained from decades of social and spatial research. This week we will therefore focus on exploring some quantitative data on London and putting these on the map. Literally.

**SAY "IT WORKS IN MY  
MACHINE"**

**ONE MORE TIME**

Memes Happen

# Worksheet assignment

The screenshot shows a web browser window with the title bar "GEOG0014" and the URL "jtvdijk.github.io/GEOG0014/03-worksheet.html". The main content area displays a "3 Worksheet" section. On the left, there's a sidebar with navigation links: "Welcome", "Mapping London", "Crime in London" (with sub-links "1 Data preparation", "2 Data mapping", and "3 Worksheet"), and "3 Worksheet" (which is the active link). The main content starts with a heading "3 Worksheet" and a paragraph about completing steps from a computer tutorial on [downloading](#) and [mapping](#) crime data. It then moves to "3.1 Part I: Camden and Islington", which includes a note about focusing on *anti-social behaviour* and *theft from person* in Camden and Islington. Below this, three numbered tasks are listed: 1. Using what you have learnt in the computer tutorial, create two maps for **Camden and Islington**. The first map is to show *anti-social behaviour* and the second map should show *theft from person*. 2. There are a number of crime hot spots for *anti-social behaviour* and *theft from person* that appear near UCL, particularly around Kings Cross Station. Visit one of these areas and take note of the features that distinguish them from nearby areas with lower crime rates. 3. You may use 1-2 pages your field notebook for your individual observations. If you want to, you can take photographs to add to your worksheet submission. Please avoid photographs that clearly feature individual people. At the bottom, a warning note says: "⚠️ For your visit: make sure that you visit as a group during the scheduled Friday afternoon slot and follow advice in the [risk assessment](#). Check the weather forecast and prepare accordingly."

**On this page**

- 3 Worksheet
- 3.1 Part I: Camden and Islington
- 3.2 Part II: Your allocated street
- 3.3 Worksheet submission
- 3.4 Further questions

[Report an issue](#)

# Worksheet assignment

The screenshot shows a web browser window with the title "GEOG0014" and the URL "jtvdijk.github.io/GEOG0014/03-worksheet.html". The main content area displays a section titled "3.2 Part II: Your allocated street". A callout box states: "This part of the assignment focuses on *all types* of crime in your allocated street." Below this, three numbered tasks are listed:

1. Using the *full* crime data set, zoom in on the street you have been allocated. What is the dominant type of crime on this street and its surrounding area in **November 2023**?
2. Revisit the [data.police.uk](#) website and create a map for all crime around your street in **November 2024** and **November 2023**. As there may be very few or no crimes in your allocated street, you can zoom out a little to incorporate surrounding streets. Do the patterns and dominant crime types change over the two years?
3. Given your knowledge of your street and your observations of the crime hotspots around UCL and Kings Cross, what other **existing** open datasets could be useful for researching crime in London? Please provide references to the datasets.

A callout box provides a tip: "If your allocated street falls outside, or on the administrative borders of, Camden and Islington but you would like to incorporate a road network in your map, you can download the full road network for London here as a [zip](#) file: [Link]. Please do note that this file is significantly larger than the [roads](#) file that we have used so far, so you may encounter some performance issues."

The sidebar on the left includes links for "Welcome", "Mapping London", and "Crime in London" sections, along with "1 Data preparation", "2 Data mapping", and "3 Worksheet". The right sidebar lists "On this page" sections: "3 Worksheet", "3.1 Part I: Camden and Islington", "3.2 Part II: Your allocated street" (which is highlighted in red), "3.3 Worksheet submission", and "3.4 Further questions". There is also a link to "Report an issue".

## 3.3 Worksheet submission

Please submit your answers to the questions above in the form of a short **group** report. The

# Worksheet submission

- Answer the questions in a short group report: no more than 500 words, maximum 4 maps, and, if using, a maximum of 2 photographs.
- Deadline: noon Monday 24 March.
- One submission per group by the allocated team lead. Make sure to include the group work coversheet in your submission and you follow the guidelines for group submissions.
- Submission link for this final worksheet task on Moodle (GEOG0014 Worksheet 4 London mapping).

# Further questions

- Dedicated **Q&A Forum** for this Week's material (link on Moodle).
- Any other questions with regard to this week's material: [j.t.vandijk@ucl.ac.uk](mailto:j.t.vandijk@ucl.ac.uk)

# Questions

Justin van Dijk

j.t.vandijk@ucl.ac.uk

