



# THE BATTLE OF THE NEIGHBORHOODS

APPLIED DATA SCIENCE CAPSTONE PROJECT



# BUSINESS PROBLEM

- Opening a new yoga studio in London. Preferably close to city center and not far from The City of London district.



# DATA

## Required information:

- centers of candidate areas generated algorithmically and approximate addresses of centers of those areas obtained using **Google Maps API reverse geocoding**
- number of yoga studios and their type and location in every neighborhood obtained using **Foursquare API**
- coordinate of The City of London center obtained using **Google Maps API geocoding** of well-known location (Trafalgar Square)

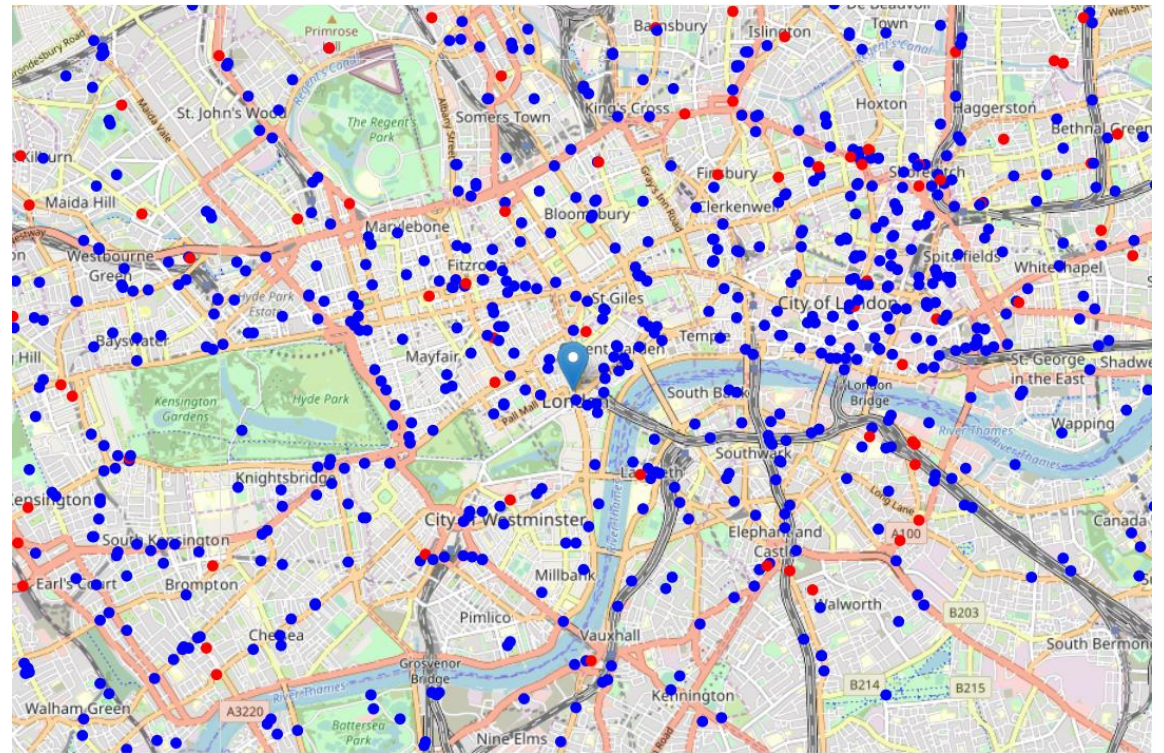
## Influence factors:

- number of existing yoga studios and gyms in the neighborhood
- number of and distance to yoga studios in the neighborhood, if any
- distance of neighborhood from Trafalgar Square

# GYMS AND YOGA STUDIOS IN LONDON

All the collected gyms in our area of interest on map, and let's also yoga studios in different color.

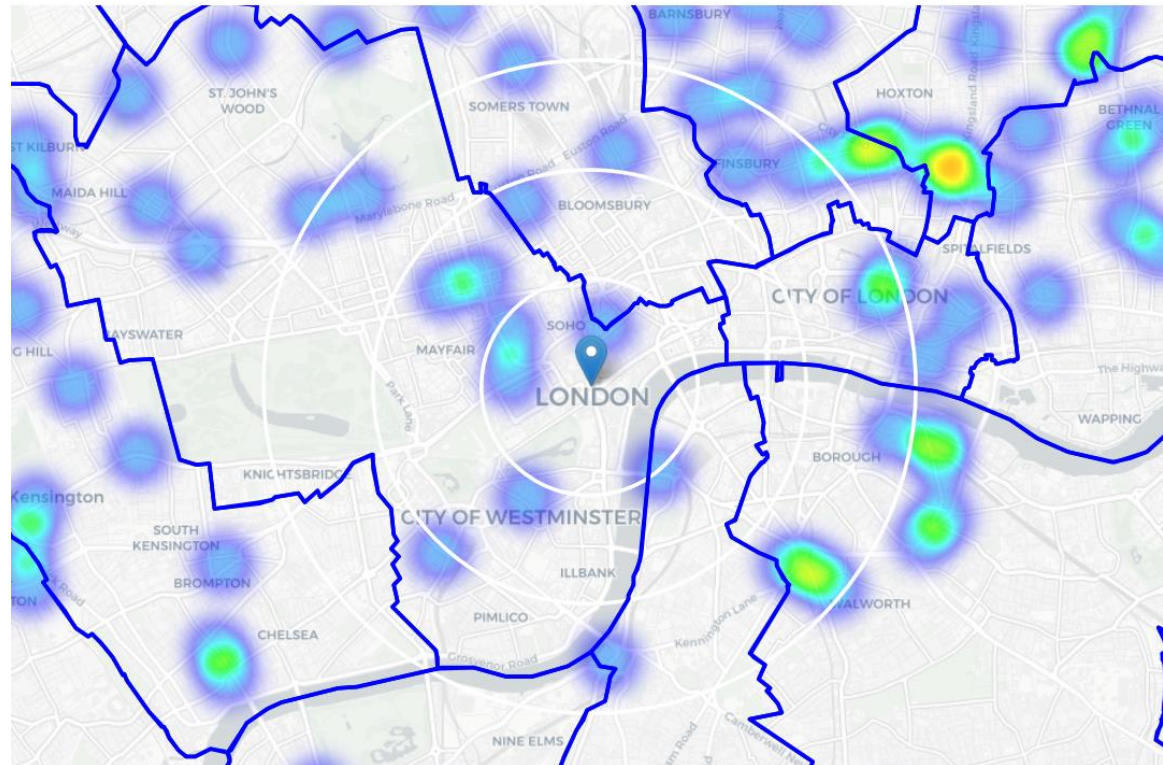
- yoga studio
- gym



# HEATMAP OF YOGA STUDIOS

Circles radius:

- 1000 m
- 2000 m
- 3000 m



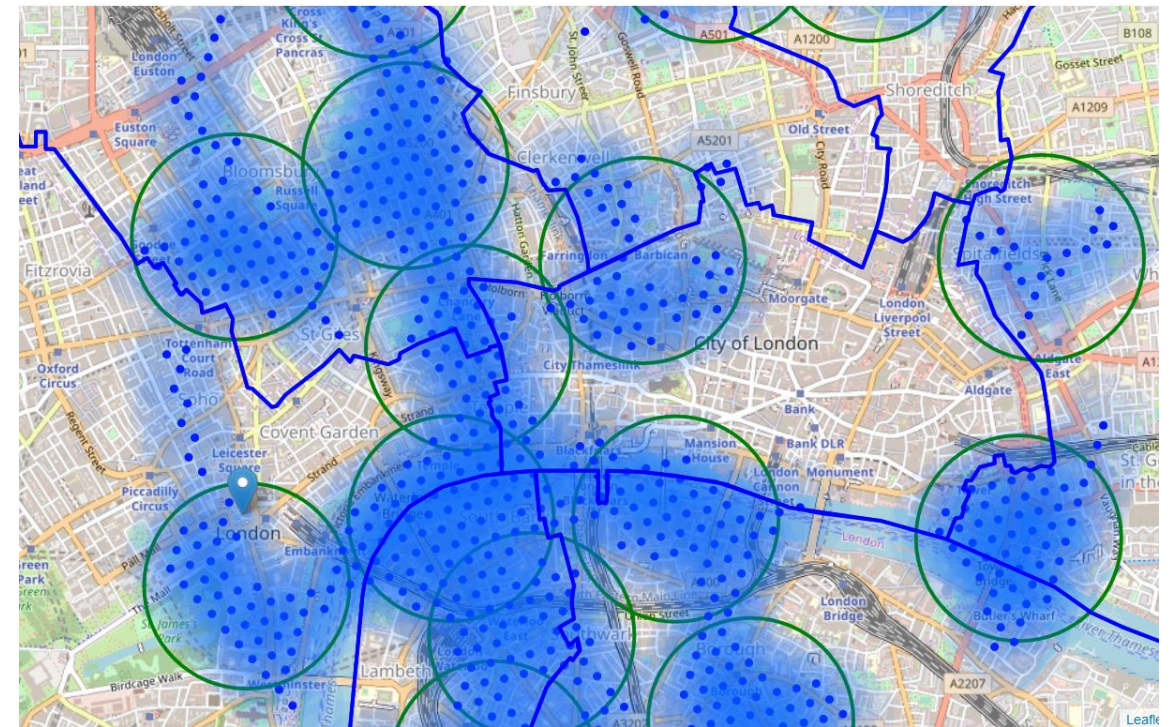


# NUMBER OF GYMS IN VICINITY AND DISTANCE TO CLOSEST YOGA STUDIO

\*radius of 250 meters

- Locations with no more than two gyms nearby: 1140
- Locations with no Yoga studios within 400m: 1244
- Locations with both conditions met: 756

Clusters represent groupings of most of the candidate locations.

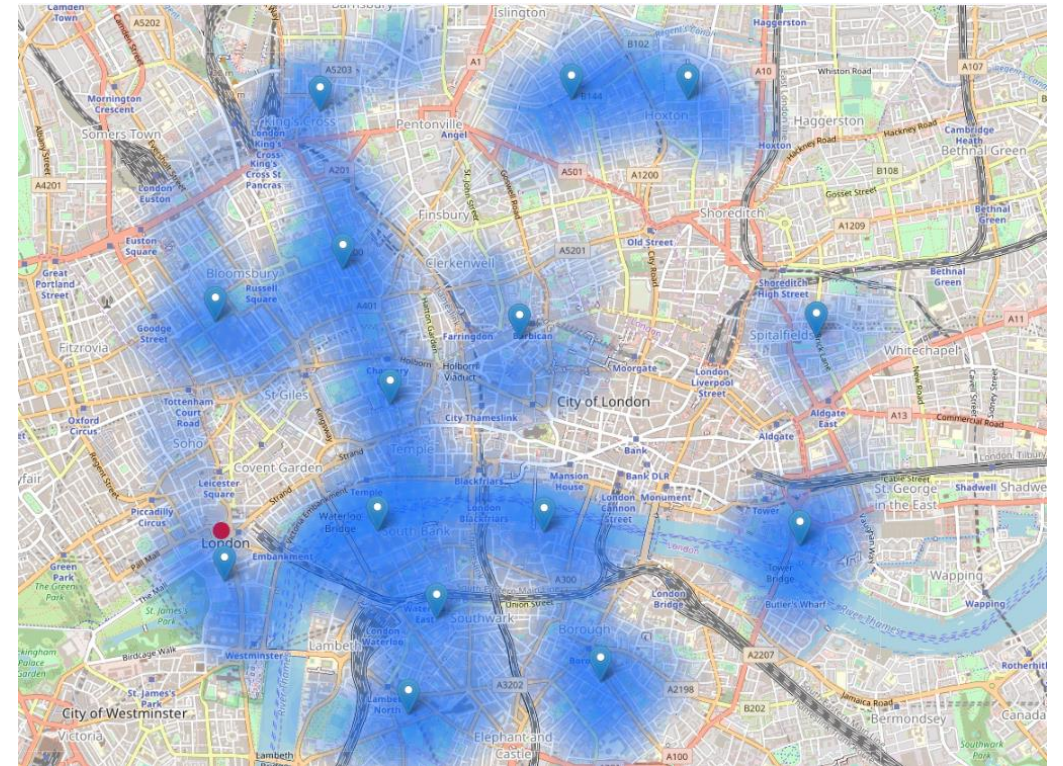


# PREDICTED ADDRESSES OF CENTERS OF AREAS FOR FURTHER ANALYSIS

Address	Km from Trafalgar Square
6 Oakey Ln, South Bank, London SE1 7HL, UK	1.7
59 Long Ln, Barbican, London EC1A 9EJ, UK	2.3
International House, 1 St Katharine's Way, St Katharine's & Wapping, London E1W 1YL, UK	3.8
Unnamed Road, London SE1 9PX	1.0
Bonington House, Killick St, Kings Cross, London N1 9BD, UK	2.8
Canal Bldg, 137 Shepherdess Walk, Hoxton, London N1 7RQ, UK	3.7
28 Cole St, London SE1 4YH, UK	2.7
8 Doughty St, Holborn, London WC1N 2PL, UK	1.9
57 Fournier St, Shadwell, London E1 6PR, UK	4.1
21 New Globe Walk, London SE1 9DT, UK	2.1
4 Whitehall Pl, Westminster, London SW1A 2AX, UK	0.3
Senate House, Bloomsbury, London WC1E, UK	1.4
93 Chancery Ln, Holborn, London WC2A 1DU, UK	1.4
89 Mintern St, Hoxton, London N1 5EP, UK	4.2
63 The Cut, South Bank, London SE1 8LL, UK	1.5

# PREDICTED ADDRESSES - MAP

15 addresses representing centers of zones containing locations with low number of gyms and no yoga studios nearby, all zones being fairly close to city center (all less than 4km from Trafalgar Square, and about half of those less than 2km from Trafalgar Square).





# RESULTS

- A great number of gyms in London (~2000 in our initial area of interest which was 12x12km around Trafalgar Square)
- Pockets of low gym density fairly close to city center. Highest concentration of gyms was detected north and west from Trafalgar Square. We focused our attention to areas south-east and east, corresponding to borough - The City of London.
- Created a dense grid of location candidates (spaced 100m apart); those locations were then filtered so that those with more than two gyms in radius of 250m and those with an yoga studio closer than 400m were removed.
- Location candidates were clustered to create zones of interest which contain greatest number of location candidates.