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2024



1. The first part of the document is a title page. It contains the title of the document, the author's name, and the date of the document.

2. The second part of the document is an abstract. It provides a brief summary of the main points of the document.

3. The third part of the document is an introduction. It provides a more detailed overview of the document's content.

4. The fourth part of the document is the main body. It contains the detailed discussion and analysis of the topic.

5. The fifth part of the document is a conclusion. It summarizes the findings of the study and provides recommendations for future research.

Age Group	Percentage
18-24	100%
25-34	90%
35-44	80%
45-54	70%
55-64	60%
65-74	50%
75-84	40%
85+	30%

Figure 6 | The number of clusters identified by K-means clustering. The number of clusters identified by K-means clustering is shown for each dataset. The x-axis represents the number of clusters (1 to 10) and the y-axis represents the number of datasets (1 to 10). The color scale indicates the frequency of clusters, ranging from 0 to 1,864.

QUESTION _____

[illegible][illegible]

QUESTION

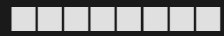
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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K-means, GeoJSON, Machine Learning, RESTful API



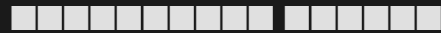
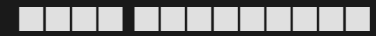
Red squares:

- ✓ 10 squares K-means 10 squares 1,864 2 squares
- ✓ 10 squares GeoJSON 4 squares
- ✓ 8 squares 10 squares Elbow Method, Silhouette
- ✓ 10 squares Google Places API
- ✓ 8 squares AI-10 squares 4 squares Claude Sonnet



Google Maps

TripAdvisor



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Input Data:

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Processing:

- K-means
- GeoJSON OSM
- Google Places API



Backend:

FastAPI, Python, MongoDB

Frontend:

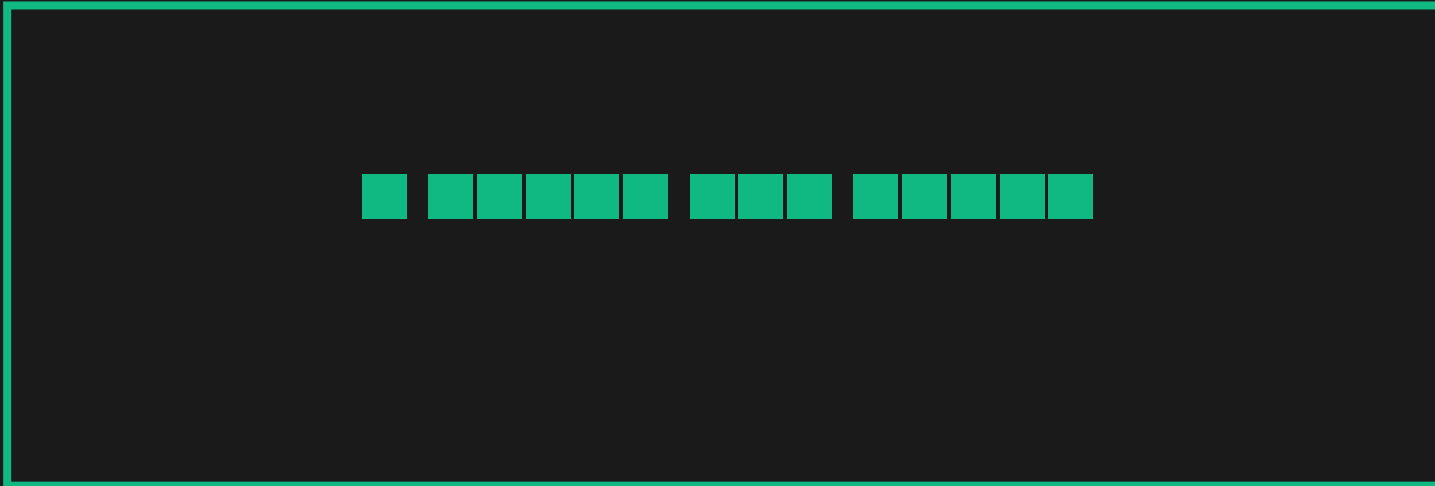
React 19, Tailwind CSS, Recharts



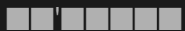
Leaflet.js, GeoJSON, OSM

AI:

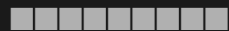
Claude Sonnet 4, Google Places API



1,864



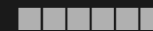
7

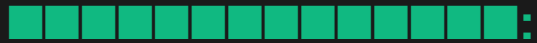


4

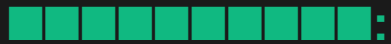


100%

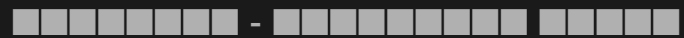




100% - Frontend







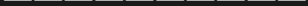


90% - Backend API



- ✓ Silhouette: 0.693
- ✓ Davies-Bouldin: 0.62
- ✓ K=7

[illegible]

- ✓  1,864 
- ✓ K-means 
- ✓  GeoJSON 
- ✓ AI-
- ✓ Google Places API 

[illegible]

