# An Investigation into Geographical Data to Provide Direction for Accommodation and Food Resources

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**Abstract**:
In several fields, geolocation and GIS have become indispensable tools. Geographic information systems (GIS) have proven indispensable in many fields due to their ability to integrate databases and show geographic data. It is the goal of this article to utilise K-Means Clustering to categorise accommodation options for migrants according to their preferences on facility, budget, and closeness to the site, and then to match those individuals with the best possible accommodation options. Immigrants to a city will have K-Means Clustering performed on their geo-locational data once it is retrieved, cleaned, analysed, and clustered.

## 1. Introduction

Thanks to innovations in technology and the proliferation of new information sources, such as cellphones and social media, geolocated data generation is on the rise, opening up exciting new possibilities. Whether you're a researcher, a business owner, or just someone interested in the world around you, geolocation and GIS are helpful tools for delving into the vast amounts of data accessible in the modern "Big Data" age. In order to improve data analysis and presentation through maps, GIS is a potent tool for combining databases and geographic data. The ability to display data using maps is one of the reasons why GIS is useful when dealing with multisource databases in a complicated process.
Experiments using GIS and Geolocation in Advertising: New subfields have emerged thanks to GIS's widespread use in the study of marketing, such as geo-marketing, which employs GIS to better understand and cater to consumers' wants and needs and, in turn, boost businesses' bottom lines, and geo-competition, which uses GIS to track down and identify rival businesses. Therefore, GIS has developed into a useful tool for boosting the efficiency of marketing initiatives and giving businesses an edge over their competitors.

The tourism is one sector generates a great deal of geographical data and stands to benefit greatly from GIS. As a consequence, geographic information systems (GIS) have been used in tourism studies to investigate tourism growth, uncover tourist hotspots, and evaluate sites, suggesting that they may be effective in marketing and managing tourist attractions. Geo-marketing and GIS have been examined in the tourism industry, and geolocation and GIS have been used in

hospitality research to investigate factors including room rates, hotel concentration, and competition. A wide range of specialists discuss how GIS can provide college students a safe and welcoming accommodation environment. Also, the spot has to be noticeable, easily accessible, useful, and enticing to the people you're trying to reach. As a general rule, for any ccommodation for lodging establishments, the land uses in the vicinity are essential. It's important to think about things like the neighborhood's attractiveness, noise level, and security.

## 2. Literature Survey

According to Kamel, Boulos, and Geraghty [9], the first map showing how different areas affected people's health goes back to 1694 and was made in connection with Italy's efforts to stop the spread of the plague. There are clear geographical factors to the location and spread of diseases, as shown by research. There was a significant increase in the use of maps as a research tool in the fields of medicine and health geography more than two centuries ago. Yellow fever, cholera, and influenza all spread rapidly in 1918 [9,10,11,12], and maps have been used to study and trace their progress ever since. With the advent of GIS systems, the digital revolution of the 1960s opened up much improved opportunities for studying disease patterns and assessing their societal, economic, and ecological effects.

According to a review of health GIS-related literature, Lyseen et al. [13] discovered that 28.7% of articles dealt specifically with infectious illness mapping. The term "geo-dashboard" was coined to describe the way in which maps and other structured data are shown together in a single interface inside a GIS, a feature that was only possible after a significant transformation that GISs experienced in the 2000s.

In [3], we have offered an initial study on the convergence of several information layers (spatial, statistical, genomic, and epidemiological) inside an original instrument of analysis, which employs design and mapping solutions to convey the COVID-19 problem. At Johns Hopkins University (Baltimore, USA), the Center for Systems Science and Engineering (CSSE) [14] has launched the first geo-dashboard for COVID-19 instances to examine the data acquired. During the first phase of the epidemic, this dynamic resource was extensively embraced. An interactive map displays data on cases, fatalities, and recoveries, and a timeline chart shows how the epidemic spreads over the world at each place. The dashboard uses information gathered from five reputable organisations: the WHO, the European Centre for Disease Prevention and Control, the CDC in the United States, the National Health Commission of the People's Republic of China, and the DXY Chinese Web medical resource.

The Information Science and GIS communities are unanimous in their support of daily near-real-time mapping of incidents and deaths using GISs because of the powerful communication tool that this provides [18]. The dashboard phenomenon, however, has also been critically examined

due to the fact that it fails to fully depict the geographies of the present. According to Everts [19], a "dashboard pandemic" is one that results in the creation of new pandemic governmentalities without taking into account more complex geographical, temporal, social, and epidemiological data. The challenge here is to provide information at a degree of detail that is engaging to the target audience. In order to collect high-quality data at a high spatial resolution, one must overcome many technical and privacy hurdles [20]. One way is to use a broader range of data: big data might aid in a more nuanced understanding of the issue, and several strategies are being tested using big data analytics tools to combat pandemics and other forms of public health emergency [21,22,23]. Meanwhile, another group of scientists is pleading for a firm commitment to open science in the form of the sharing of epidemiological data [16,24] and nucleotide sequences [25]. These are necessary for the success of digital public health, which seeks to improve the efficacy of tracing/isolating tactics for pandemic control [27] by allowing everyone to contribute their analysis (particularly competent research groups in academia, as suggested by Wissel et al. [26]).

In this exploratory review research, we pay special attention to one important example of tool evolution: the World Health Organization's COVID-19 Situation Dashboard [28]. In particular, it is important to compare the two website iterations using semiotics [29]. For the time period of January 26th, 2020 through April 6th, 2020, the World Health Organization (WHO) made available online an ArcGIS Operation Dashboard (Figure 1a), which included a world map depicting, with simple WebGIS-based features, the geographical spread at a country-level level, as well as affected countries, laboratory-confirmed cases by date of report, and a cumulative curve with dates and a scale in plain text. Provinces, autonomous areas, and municipalities all supplied statistics, but only for China.

## 3. Existing System

There are opportunities to purchase and sell properties, as well as stay in hostels, under the current system. As expected, it doesn't suggest any hotels within our accommodation range. There are really unusual occurrences of properties falling inside our budget. Furthermore, it does not provide suggestions for eating establishments, fitness centres, etc., depending on the user's financial constraints. True recommendations have been lacking from prior studies.

## 4. Proposed System

In addition to displaying information on recommended hostels, flats, and residences, the proposed system also provides recommendations for these types of lodging. information about the proprietor (including pictures, a contact form, a chat feature, and a 360-degree view) It suggested hotels that were within our accommodation range. Lots of homes within our price range are shown. It also provides recommendations for restaurants, fitness centres, etc., taking into account the user's financial constraints. It gives complete and honest suggestions. The K-

means technique is being used for this project, although it has the issue of producing incorrect results if two circular clusters with the same mean have different radii. K-Means does not make a distinction between the two clusters; instead, it utilises the median value to determine the cluster centre. When the sets are not circular, it fails as well. To get around this shortcoming, we're using a technique called expectation-maximization (Em) clustering with Gaussian mixture models (GMM).

Methodology

- Collect Datasets from Relevant Sources (Data Collection)
- Datasets should be cleaned before analysis.
- Cleaning Data using Pandas
- Use box plots to display the information. (Created using Matplotlib, Seaborn, and Pandas)
- Retrieve Geolocational Data ((Foursquare API)REST APIs), Cluster the Data Using K-Means (Scikit-Learn), and Finally, Find the Clusters on a Map (Folium/Seaborn).

**5. Implementation**

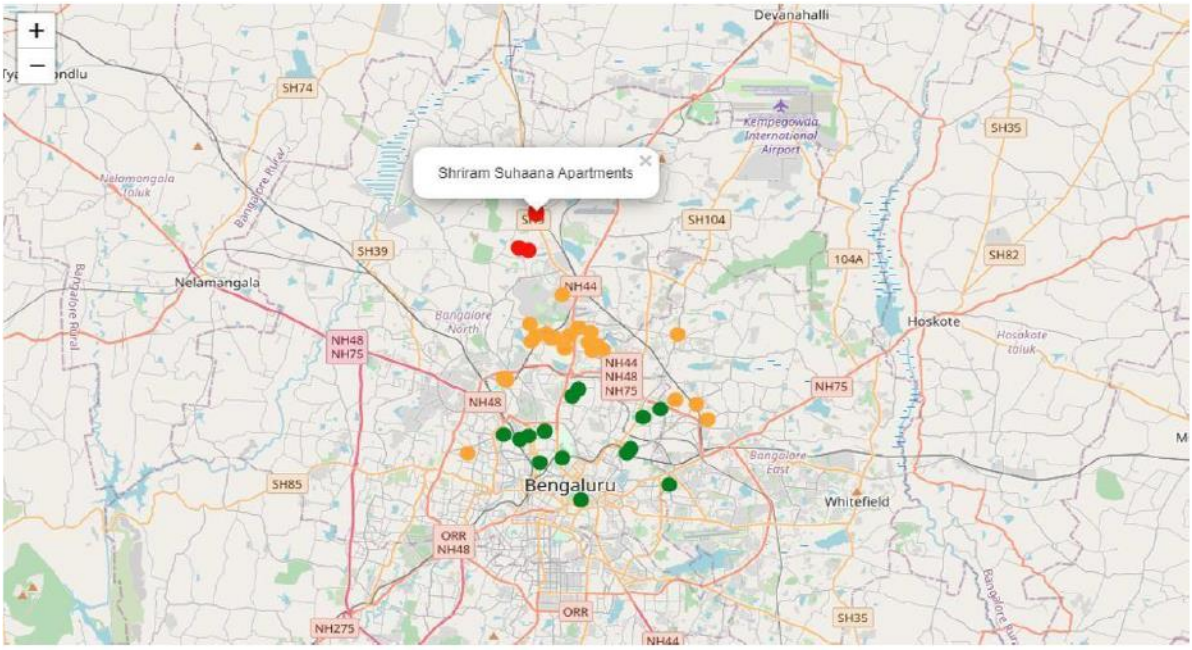
The Data Collection: User information should be gathered and stored in a database for analysis.

The Searching Subsystem : The user inputs their desired location and budget, and the system returns results that meet their needs.

A Suggestions Unit: The suggestion will be shown when the necessary data has been searched for using the search box. Taking in to account cost and need.

Data Communication

Once the guest has decided on the ideal accommodation from those shown, the communication module will forward them to the proprietor's contact information.



Here, we are dividing the population or data points into several groups such that data points in the same groups are more similar to other data points in the same group than those in other groups. In simple words, the aim is to segregate groups with similar traits and assign them into clusters.

6. **Conclusion**:

The importance of geolocation in the hospitality industry will be discussed, as will the application of GIS and geolocation to assess the level of hotel competition in a popular tourist destination. To better analyse competitiveness in the modern tourism environment, geolocation is used into hotel competition research to give more comprehensive data on all of the zones within a single travel destination (World Economic Forum, 2019). Last but not least, customers desperately need geolocation features integrated into the hotel selection process.

**References**

[1] Arampatzis, G., Kiranoudis, C., Scaloubacas, P., and Assimacopoulos, D. (2004). A gis-based decision support system for planning urban transportation policies. European Journal of Operational Research, 152(2):465 – 475. New Technologies in Transportation Systems.Barczyszyn, G. L. (2015).

[2] M. Sumithra and Dr. S. Malathi, "A Novel Distributed Matching Global and Local Fuzzy Clustering (DMGLFC) FOR 3D Brain Image Segmentation for Tumor Detection", IETE Journal of Research, doi.org/10.1080/03772063.2022.2027284, 2021 International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 09 Issue: 07

[3] B.Buvanswari and T.Kalpalatha Reddy, "A Review of EEG Based Human Facial Expression Recognition Systems in Cognitive Sciences" International Conference on Enenrgy, Communication,Data analytics and SoftComputing(ICECDS),CFP17M55-PRJ:978-1-5386-1886-8",August 2017.

[4] Chethana, C., Subbiah Swaminathan, S. Sharanyaa, E. Sathish, R. Prathipa, and Anuradha Thakare. "Application Of Reverse Engineering in the Process of Utilization of Human Brain in Artificial Intelligence." Journal of Optoelectronics Laser 41, no. 3 (2022): 89-93.

[5] M. Sumithra and Dr. S. Malathi, " Modified Global Flower Pollination Algorithm-based image fusion for medical diagnosis using computed tomography and magnetic resonance imaging", International Journal of Imaging Systems and Technology, Vol. 31, Issue No.1, pp. 223-235, 2021 [6] K. Sridharan , and Dr. M. Chitra "SBPE: A paradigm Approach for proficient Information Retrieval , Jokull Journal" , Vol 63, No. 7;Jul 2013

[7] Sharanyaa, S., P. N. Renjith, and K. Ramesh. "Classification of Parkinson's disease using speech attributes with parametric and nonparametric machine learning techniques." 2020 3rd International Conference on Intelligent Sustainable Systems (ICISS). IEEE, 2020.

[8] M. Sumithra and Dr. S. Malathi, "3D Densealex NET Model with Back Propagation for Brain Tumor Segmentation", International Journal OfCurent Research and Review, Vol. 13, Issue 12, 2021.
[9] B.Buvaneswari and Dr.T. Kalpalatha Reddy,"EEG signal classification using soft computing techniques for brain disease diagnosis",Journal of International Pharmaceutical Research ,ISSN : 1674-0440,Vol.46,No.1,Pp.525-528,2019.
[10] Sharanyaa, S., P. N. Renjith, and K. Ramesh. "An Exploration on Feature Extraction and Classification Techniques for Dysphonic Speech Disorder in Parkinson's Disease." In Inventive Communication and Computational Technologies, pp. 33- 48. Springer, Singapore, 2022.
[11] K. Sridharan , and Dr. M. Chitra "Web Based Agent And Assertion Passive Grading For Information Retervial", ARPN Journal of Engineering and Applied Sciences, VOL. 10, NO. 16, September 2015 pp:7043-7048
[12] M. Sumithra and Dr. S. Malathi, "Segmentation Of Different Modalitites Using Fuzzy K-Means And Wavelet ROI", International Journal Of Scientific & Technology Research, Vol. 8, Issue 11, pp. 996-1002, November 2019.
[13] Sharanyaa, S., S. Lavanya, M. R. Chandhini, R. Bharathi, and K. Madhulekha. "Hybrid Machine Learning Techniques for Heart Disease Prediction." International Journal of Advanced Engineering Research and Science 7, no. 3 (2020).
[14] Butler, J. A. (2008). Designing Geodatabases for Transportation. Esri Press.
[15] M. Sumithra and S. Malathi, " A Survey of Brain Tumor Segmentation Methods with Different Image Modalitites", International Journal of Computer Science Trends and Technology (IJCST) – Vol. 5 Issue 2, Mar – Apr 2017
[16] B.Buvaneswari and Dr.T. Kalpalatha Reddy, "High Performance Hybrid Cognitive Framework for Bio-Facial Signal Fusion Processing for the Disease Diagnosis", Measurement,ISSN: 0263-2241, Vol. 140, Pp.89-99,2019.
[17] Sharanyaa, S., and M. Shubin Aldo. "Explore places you travel using Android." In 2016 International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT), pp. 4796-4799. IEEE, 2016.
[18] M. Sumithra and Dr. S. Malathi, "A Brief Survey on Multi Modalities Fusion", Lecture Notes on Data Engineering and Communications Technologies, Springer, 35, pp. 1031-1041,2020.
[19] Sharanyaa, S., and Madhumitha RP. "Eyeball Cursor Movement Detection Using Deep Learning." RP, Madhumitha and Rani. B, Yamuna, Eyeball Cursor Movement Detection Using Deep Learning (July 12, 2021) (2021).
[20] Calixto, A., Diniz, F. B., and Zannin, P. (2003). The statistical modeling of road traffic noise in an urban setting. Cities, 20:1–74
[21] M. Sumithra and S. Malathi, "A survey on Medical Image Segmentation Methods with Different Modalitites", International Journal of Engineering Research and Technology (IJERT) – Vol. 6 Issue 2, Mar 2018.

[22] B.Buvaneswari and Dr.T. KalpalathaReddy,"ELSA- A Novel Technique to Predict Parkinson's Disease in BioFacial",International Journal of Advanced Trends in Computer Science and Engineering, ISSN 2278-3091,Vol.8,No.1,Pp. 12- 17,2019
[23] K. Sridharan , and Dr. M. Chitra , Proficient Information Retrieval Using Trust Based Search On Expert And Knowledge Users Query Formulation System, Australian Journal of Basic and Applied Sciences, 9(23) July 2015, Pages: 755-765.
[24] Sharanyaa, S., and K. Sangeetha. "Blocking adult account in osn's using iterative social based classifier algorithm." International Journal of Scientific Engineering and Science 2, no. 1 (2018): 33-36.
[25] B.Buvaneswari and Dr.T. Kalpalatha Reddy, "ACPT- An Intelligent Methodology for Disease Diagnosis",Journal of Advanced Research in Dynamical and Control Systems,ISSN : 0974-5572,Vol.11,No.4,Pp.2187-2194,2019.
[26] Sumithra, M., Shruthi, S., Ram, S., Swathi, S., Deepika, T., "MRI image classification of brain tumor using deep neural network and deployment using web framework", Advances in Parallel Computing, 2021, 38, pp. 614–617.
[27] K. Sridharan , and Dr. M. Chitra "RSSE: A Paradigm for Proficient Information Retrieval using Semantic Web" , Life Science Journal 2013;10(7s), pp: 418-425
[28] Sharanyaa, S., S. Vijayalakshmi, M. Therasa, U. Kumaran, and R. Deepika. "DCNET: A Novel Implementation of Gastric Cancer Detection System through Deep Learning Convolution Networks." In 2022