e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:04/April-2023 Impact Factor- 7.868 www.irjmets.com

GEOTAGGING WITH VIRTUAL TOUR ON BHARAT MAP

Prof. Sakshi Khamankar[*1], Kshitija Kalbande[*2], Shraddha Kamble[*3], Vedaanti Badwaik[*4], Asmita Pawar[*5]

[*1,2,3,4,5]Cummins College Of Engineering For Women, Nagpur, India.

DOI : https://www.doi.org/10.56726/IRJMETS37246

ABSTRACT

Associating geotags with multimedia resources allows online multimedia repositories to be browsed and searched using geographic criteria, but millions of already online but untagged videos and images remain invisible to the eyes of this type of system. This situation calls for the development of automatic geotagging techniques capable of estimating the location where the video or image was taken. This project presents a geotagging system for 360° videos based on the extraction and augmentation of geographic information contained in textual metadata and visual similarity criteria. The system is specifically designed to geotag and display 360° videos for a virtual tour of colleges. Thanks to the rapidly growing modern technology, we can sit at home and take a virtual tour of some of the world's famous places. Solving this problem will allow parents and students to get a complete virtual tour of colleges and instantly get information about courses and facilities. This will also save travel time and expenses and enable parents/guardians to make better decisions about schools, courses and hostel facilities. Geotagging of all educational institutions integrated with virtual tour on Bharat map so that all students/parents can visit any part of the country on the map and take virtual tour along with facilities/courses available across the country is a much-needed solution to help students. and their parents/guardians make decisions at home. This will allow parents and students to get a complete virtual tour of the colleges and instantly get information about courses and facilities. This will save time and in the current COVID crisis this solution will benefit many students as the risk of disability while traveling will be completely reduced.

I. INTRODUCTION

An increasingly popular way to experience out-of-the-way places is by watching 360° virtual tour videos that show the surrounding view as you travel through the environment. However, finding specific locations in these videos can be difficult because current interfaces rely on distorted image previews for navigation. To alleviate this usability problem, we propose a method for easy navigation in videos. Introducing a video player interface using a navigation timeline. For example, if a user is looking for a specific college, they will first be redirected to a navigation panel where they can select the location they want to explore. Places within the school will be broken down and added to the navigation pane for easy exploration. network bandwidth. Saving application data to the cloud/server (thin client).

II. BACKGROUND AND RELATED WORK

Geo-tagging is a fast-growing trend in digital photography and community photo sharing. The presence of geographically relevant metadata with images and videos has opened up interesting research avenues in multimedia and computer vision. In this article, we examine research related to geo-tagging in the context of multimedia and along three dimensions: (1) the ways in which geographic information can be extracted, (2) the applications that can benefit from the use of geographic information, and (3) the interplay between modalities and applications. Our survey will present research issues and discuss significant approaches. We will discuss the nature of the different modalities and suggest factors that should guide selection with respect to multimedia and visual applications. Finally, we discuss future research directions in this area.B. Geotagged video can integrate geospatial semantics and video image features by extracting spatial information such as video location and field of view. Thus, geotagged video is an important source of geographic information that has received attention in many fields such as GIS, computer vision, and data mining (Luo et al., 2011). Several studies have been conducted in this area in the last few years, including the collection and processing of geotagged video data (Burr et al., 2018; Mills et al., 2010); data modelling (Han et al., 2016; Lewis et al., 2011); video retrieval based on spatial semantics (Kim et al., 2010; Lu & Shahabi, 2017; Ma et al., 2014; Wu et al.,

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:04/April-2023 Impact Factor- 7.868 www.irjmets.com

2018); video mapping, analysis and mining (Jamonnak et al., 2021; Rumora et al., 2021; Wang et al., 2022; Zhang et al., 2021); and video synopsis (Jamonnak et al., 2020; Xie et al., 2022; Zhang et al., 2019).

A particularly interesting problem is obtaining geographic locations or information relevant to geographic locations. This process of providing geographical identity information is usually called Geotagging and is gaining importance due to its role in several applications. It is useful not only in location services and recommender systems, but also in general cataloguing, organizing, searching, and retrieving multimedia content on the web. Location-specific information also allows the user to place their multimedia content in a social context, as it is human nature to associate with the geographical identity of any material. A nice overview of the different aspects of geotagging in multimedia can be found in [Choi et al., 2015, Luo et al., 2011. Most current work on geotagging focuses on the use of the visual/image component of multimedia and the associated text in multimedia ([Trevisiol et al., 2013] [Luo et al., 2011] [Song et al., 2012] to name a few). The audio component has been largely ignored, and there is little work done on location prediction based on the audio content of multimedia.

III. SYSTEM DESIGN

An increasingly popular way to experience out-of-the-way places is by watching 360° virtual tour videos that show the surrounding view as you travel through the environment. However, finding specific locations in these videos can be difficult because current interfaces rely on distorted image previews for navigation. To alleviate this usability problem, we propose Route Tapestries, a continuous orthographic-perspective projection of scenes along camera routes. First, we present an algorithm for the automatic construction of Route Tapestries from 360° video, inspired by the slit-scanning technique. We then present a desktop video player interface using the Route Tapestry timeline for navigation. An online evaluation using a target-finding task showed that Route Tapestries enabled users to locate targets 22% faster than with equidistant YouTube-style previews and reduced the failure rate by 75% compared to the more conventional thumbnail row strip preview. Our results highlight the value of reducing visual distortion and providing continuous visual contexts in previews for navigating 360° virtual tour videos.

In this section, we need to design and develop a system for Geo Tagging 360° videos from universities and institutes for the following purposes:

1. Virtual tour of colleges/institutions without actually being there.
2. Information about facilities provided by universities.
3. The system is developed in the form of a web application.
4. The stack used for development is Django.
5. The first stage of the system is user authentication, which consists of sub-modules Registration, Login and Forgot Password.

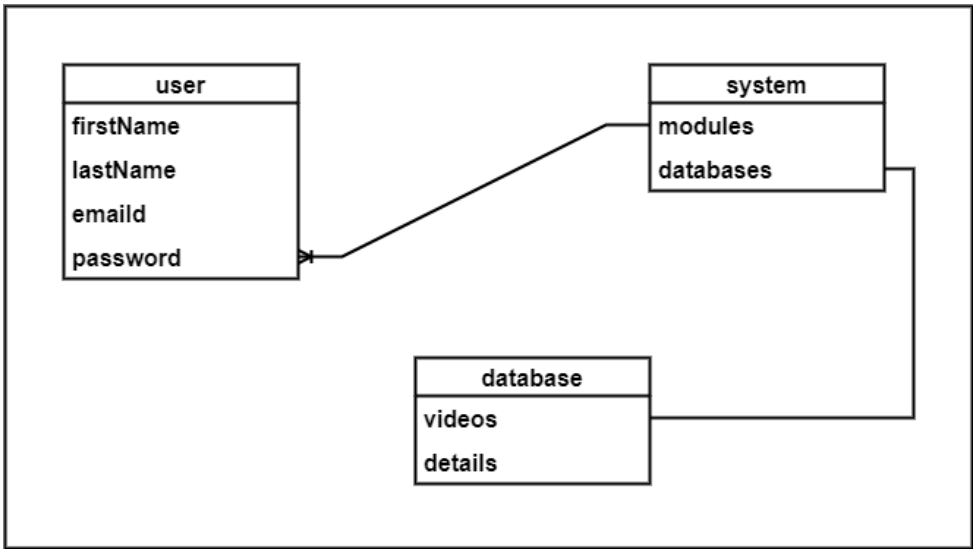


Fig 1. System Design

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:04/April-2023 Impact Factor- 7.868 www.irjmets.com

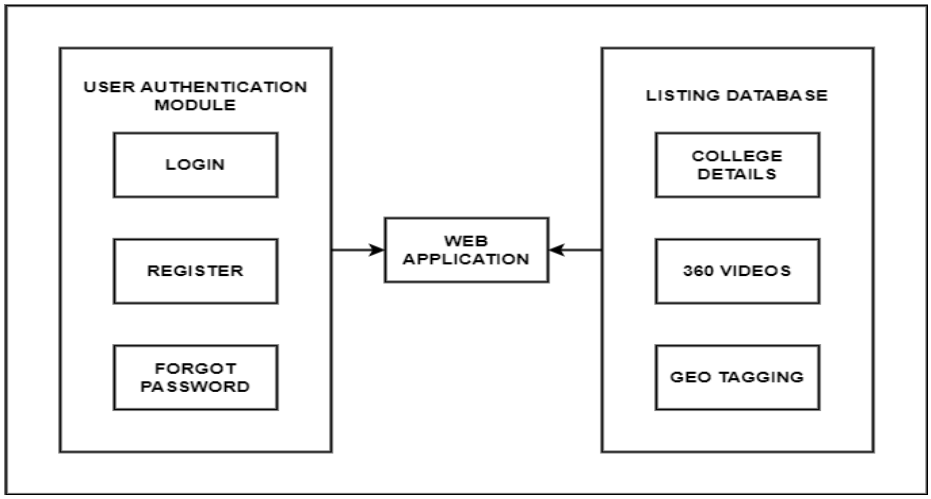
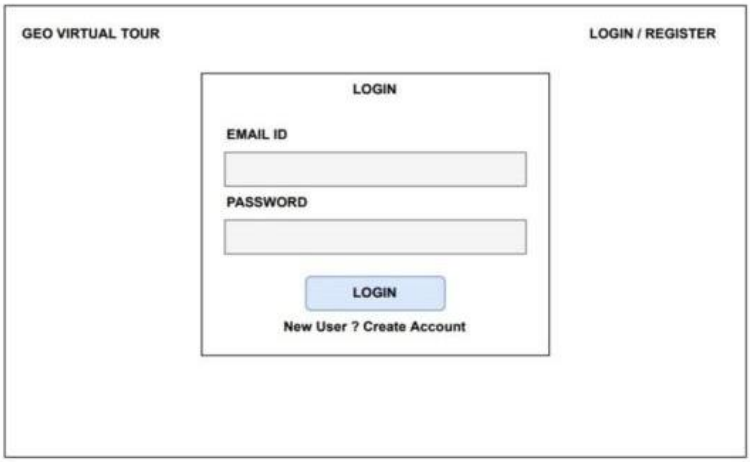


Fig2. System Design

1. User can register using email id and password by creating their profiles and login to that profile to view information.
2. School data will be stored in the database.
3. It consists of 360 videos along with other information about the college.
4. User can view the school and view the facilities and other details.

Progress

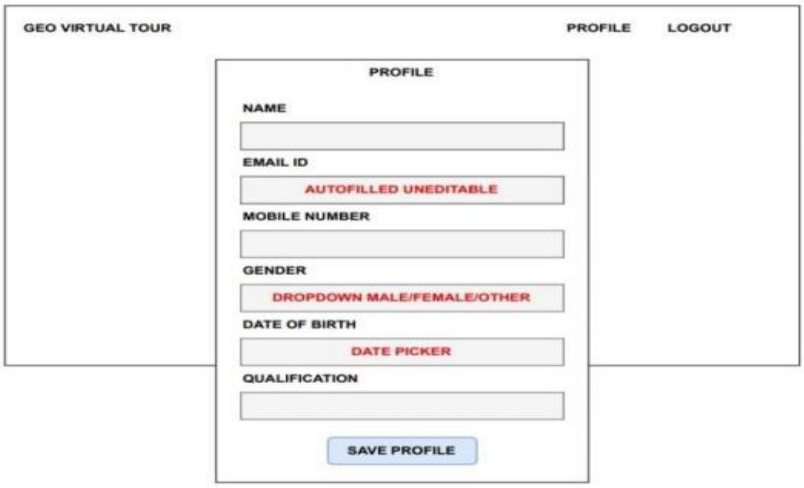
1



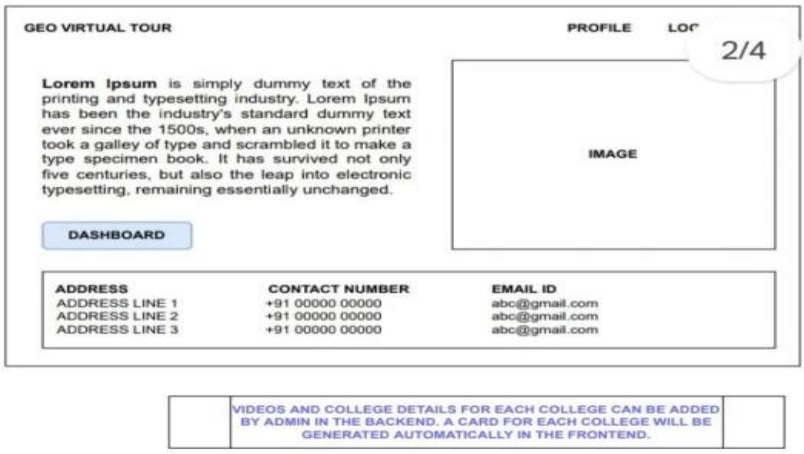
2

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:04/April-2023 Impact Factor- 7.868 www.irjmets.com

3

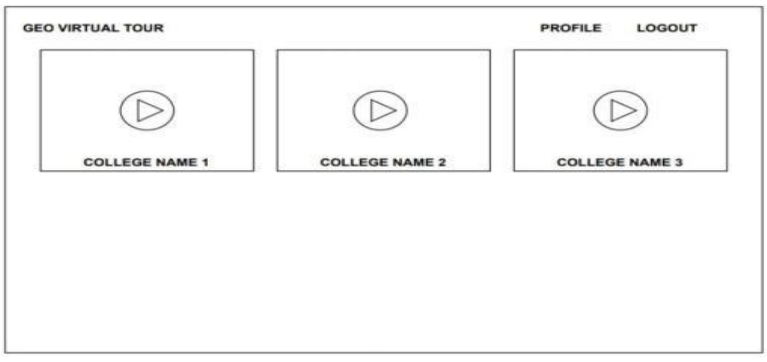


4



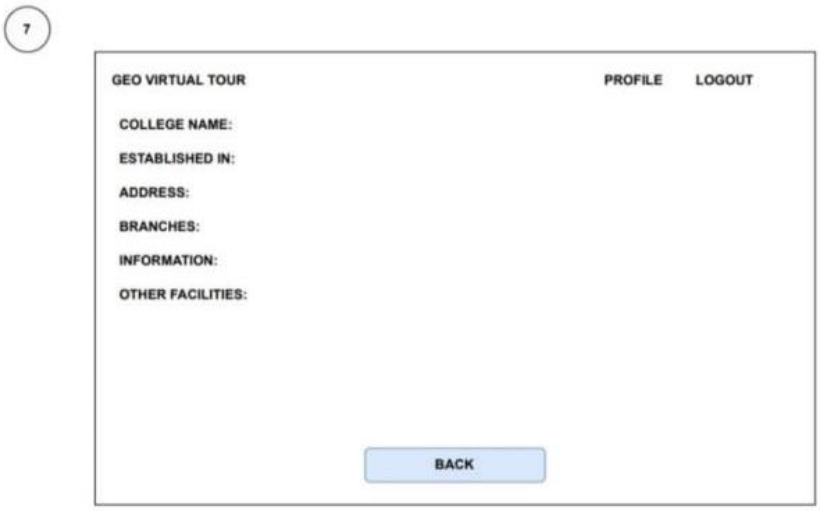
VIDEOS AND COLLEGE DETAILS FOR EACH COLLEGE CAN BE ADDED BY ADMIN IN THE BACKEND. A CARD FOR EACH COLLEGE WILL BE GENERATED AUTOMATICALLY IN THE FRONTEND.

5



6

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:04/April-2023 Impact Factor- 7.868 www.irjmets.com



IV. CONCLUSION

The project has a big scope as it will help students and other users to navigate through the college or institute from anywhere in the world without actually being there. It will be similar to Google's Street View where the user can take a virtual tour of colleges/institutions instead of the street.

An important point to note is the difference between automatic and manual geotagging. For clarity, the following terms are defined in this document:

1. Automatic geotagging. The photo is automatically placed on the map by software that uses the latitude and longitude stored in the photo.
2. Manual geotagging. Manually drag the pin onto the digital map at the approximate location where the photo was taken.

Obviously, automatic geotagging is preferred for university fieldwork purposes due to increased location accuracy. Manual geotagging is popular with users who want to quickly add basic spatial information and are less concerned with exact location. This article focuses specifically on smartphone software capable of automatically geotagging and plotting images on a map.

V. REFERENCE

[1] M. Larson, M. Soleymani, P. Serdyukov, V. Murdock, and G.J.F. Jones (eds.), Working Notes Proceedings of the MediaEval 2010 Workshop, Pisa, Italy, 2010.

[2] M. Larson, A. Rae, C.H Demarty, C. Kofler, F. Metze, R. Troncy, V. Mezaris, and G.J.F. Jones (eds.), Working Notes Proceedings of the MediaEval 2011 Workshop, Pisa, Italy, 2011.

[3] R. Szeliski, "Where am I?" in ICCV 2005 Computer Vision Contest, 2005.

[4] N. Snavely, S.M. Seitz, and R. Szeliski, "Photo tourism: exploring photo collections in 3D," in SIGGRAPH, 2006.

[5] I. Simon, N. Snavely, and S.M. Seitz, "Scene summarization for online image collections," in ICCV, 2007.

[6] J. Hays and A. Efros, "IM2GPS: estimating geographic information from a single image," in CVPR08, 2008.

[7] O. Van Laere, S. Schockaert, and B. Dhoedt, "Finding locations of Flickr resources using language models and similarity search," in ICPR, 2011.

[8] J. Luo, D. Joshi, J. Yu, and A. Gallagher, "Geotagging in multimedia and computer vision - a survey," in Multimedia Tools Appl (51), 2010, pp. 187–211.

[9] P. Serdyukov, V. Murdock, and R. van Zwol, "Placing Flickr photos on a map," in SIGIR, 2009.

[10] D. Crandall, L. Backstrom, D. Huttenlocher, and J. Kleinberg, "Mapping the worlds photos," in WWW, 2009.

[11] P. Kelm, S. Schmiedeke, and T Sikora, "Multi-modal, multiresource methods for placing Flickr videos on the map," in ICMR11, 2011.

[12] Aseem Agarwala, Maneesh Agrawala, Michael Cohen, David Salesin, and Richard Szeliski. 2006. Photographing long scenes with Multiview point panoramas. In ACM SIGGRAPH 2006 Papers. 853– Google Scholar Digital Library

[13] Luigi Bagnato, Pascal Frossard, and Pierre Vandergheynst. 2009.

[14] Optical flow and depth from motion for omnidirectional images using a tv-l1 variational framework on graphs. In 2009 16th IEEE International Conference on Image Processing (ICIP). IEEE, 1469–1472. Google Scholar Cross Ref

[15] Werner Bailer, Christian Schober, and Georg Thallinger. 2006. Video Content Browsing Based on Iterative Feature Clustering for Rushes Exploitation. In TRECVID. Cite seer. Google Scholar

[16] Connelly Barnes, Dan B Goldman, Eli Shechtman, and Adam Finkelstein. 2010. Video tapestries with continuous temporal zoom. In ACM SIGGRAPH 2010 papers. 1–9. Google Scholar Digital Library

[17] Wutthigrai Boonsuk, Stephen Gilbert, and Jonathan Kelly. 2012. The impact of three interfaces for 360-degree video on spatial **cognition. In** Proceedings of the SIGCHI conference on human factors in computing systems. 2579–2588.