International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 04 | Apr 2021 www.irjet.net p-ISSN: 2395-0072

Review on Multimedia Summarization System using Machine Learning

Shahnawaz Khan[1], Amey Madane[2], Nabil Sayyed[3], Kempayya Halallimath[4],

Prof. Sneha Deshmukh[5]

[1-4] Student, Department of Computer Engineering, DPCOE - Dhole Patil College of Engineering, Pune, Maharashtra, India.
[5]Assistant Professor, Department of Computer Engineering, DPCOE - Dhole Patil College of Engineering, Pune, Maharashtra, India.

Abstract - *As in today's era, informative and variety of knowledge can be gathered from internet or on any social platform such as classified news, educational videos, sport clips, images, etc. But people are basically having a very busy running life so finding suitable and appropriate knowledge base information has become very difficult. To overcome such problem multimedia video summarization can help an individual in dealing with this type of massive data. Knowing in short about video summarization, it is defined as creating a shorter video clip or a video poster which includes only the important scenes in the original video streams. This can be implemented on any data like audio, video, clips, etc. This can be achieved with tremendous contribution from NLP that is Natural Language Processing, which is basically of the system to understand the user requirements and help them to find out a perfect solution. This paper uses MM-LDA techniques to partition the microblogs relevant to the same topic into different subtopics. This will summarize multimedia microblogs for trending Topics on a social platform named Twitter. Hence it will process textual and visual summaries for each subtopic, by utilizing the reinforced textual/visual distributional information. Then, the textual and visual summaries are aggregated to form a comprehensive multimedia summary*.

Key Words: Twitter API, Summarization, Trending Topic, Social Media, OCR, MM-LDA, NLP, HMDSS.

1. INTRODUCTION

Now-a-days, every person wants useful data in short content from social media, where it can reduce his/her efforts or time to see it, but from some social media application or television shows some extra unimportant data is added into it, because of it they show too much irrelevant data rather than important and also it consumes too much time to watch or read it. This paper can overcome this problem where it can show important parts from video or text summary. Basically, it automatically generates short summary from videos, images or textual data.

Where this paper represents an HMDSS system that utilizes the techniques of NLP, speech processing and OCR watermarking technique to generate the summary. The basic concept is to measure the similarity between heterogeneous data. For visual posts, it extracts text from images using OCR (Optical Character Recognition) technique. After, the generated summary for important visual information through content-image matching or topic modeling.

Finally, all the heterogeneous data are useful for generating a textual summary by maximizing the importance, and scope through the features.

2. MOTIVATION

Suppose you have large amount of data or information with you and also have long period of time videos but you don't have time to read the information and watch the videos then you have no other option with the help of this paper you can generate short summary for your video and for your text then you can overview that and save your time.

It can automatically Generate Visualized Summary for trending topics on twitter with the help of Twitter API.

3. LITERATURE SURVEY

In Multimedia-Summarization technique by J. Bian, Y. Yang, H. Zhang, and T.-S. Chua the paper proposes a multimedia social occasion summarization framework to automatically generate visualized summaries from the microblog circulation of multiple media kinds. Specifically, the proposed framework contains three ranges: 1) A noise removal approach is first devised to cast off probably noisy pictures. 2) A novel move-media probabilistic version, termed Cross-Media-LDA (CMLDA), is proposed to together find out subevents from microblogs of more than one media sorts. 3)

Finally, based at the move-media know-how of all of the observed subevents. Advantages are: Eliminates the doubtlessly noisy pics from raw microblog photograph collection. Generate the multimedia summary for social activities utilizing the go-media distribution information of all the located subevents. Disadvantages are: Need to extend the pass-media framework for routinely detecting social occasions and retrieving related candidate microblogs. Need to personalized microblog summarization based totally on person profile.

The next paper proposed by M. S. Bernstein, B. Suh, L. Hong, J. Chen, S. Kairam, and E. H. Chi, Eddi is a novel interface for browsing Twitter streams that clusters tweets by topics trending within the user's own feed. An algorithm for topic detection and a topic-oriented user interface for social information streams such as Twitter feeds. (1) benchmark Twee Topic against other topic detection approaches, and (2) compare Eddi to a typical chronological interface for consuming Twitter feeds. Advantages are: A simple, novel topic detection algorithm that uses noun phrase detection and a search engine as an external knowledge base. Eddi is more enjoyable and more efficient to browse than the traditional chronological Twitter interface. Disadvantages are: Users had access to our clients for a limited time, making it difficult to extrapolate conclusions on how the tool might be used longitudinally. Users were viewing the history of their feed rather than tweets they had never seen before, making our task slightly less realistic.

This paper was proposed by W. Y. Wang, Y. Mehdad, D. R. Radev, and A. Stent, the paper proposes a singular matrix factorization technique for extractive summarization, leveraging the success of collaborative filtering. First to consider illustration learning of a joint embedding for textual content and snap shots in timeline summarization. Advantages are: It is straightforward for builders to set up the device in real-world packages. Scalable method for studying low-dimensional embeddings of information tales and snap shots. Disadvantages are: Only work on summarizing synchronous multi-modal content.

The next paper proposed by Z. Li, J. Tang, X. Wang, J. Liu, and H. LuIn, in this paper, expand a novel method of multimedia news summarization for looking consequences on the Internet, which uncovers the underlying subjects among question-associated news information and threads the news occasions inner every topic to generate a query-related brief evaluate. HLDA is adopted to find out the hierarchical subject matter shape from the question-related information articles, and an approach based totally on the weighted aggregation and max pooling to identify the typical news article for each subject matter is proposed. A time-bias MST technique is evolved to thread the subtopics inside one topic to give a news precis on every subject matter in phrases of temporal and spatial improvement. Advantages are: Proposed gadget can gift shiny and complete data without problems. Readers can fast recognize the information that they require thru the multimedia summarization in this system.

4. PROBLEM STATEMENT

To build and implement Heterogeneous Modal Data Summarization System for automatic generating summary using Twitter API with the help of tweets, images etc.

5. SYSTEM ARCHITECTURE

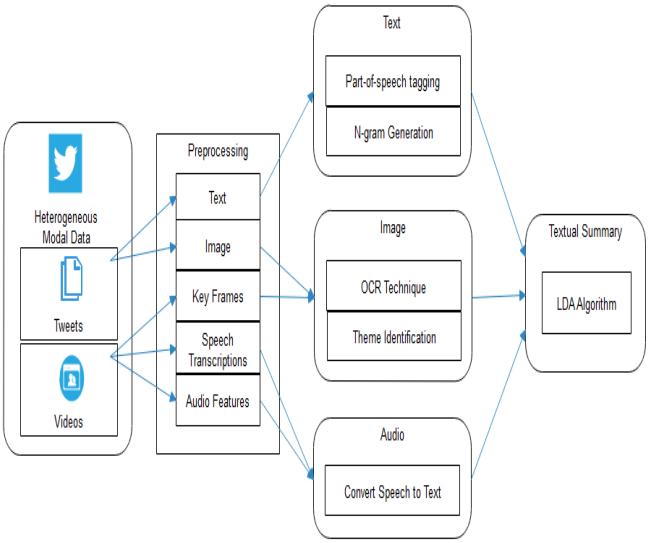

Fig. System Architecture

6. ADVANTAGES

1. It is efficient and also easy to access.
2. Convert the vast data into short data with same impact.
3. Multimedia contents can facilitate subtopic discovery.
4. Well organizing the messy microblogs into structured subtopics.
5. Generating high quality textual summary at subtopic level.
6. It consumes less time.

7. APPLICATIONS

1. Hypermedia Courseware
2. Video Conferencing
3. Video-on-demand
4. Interactive TV
5. Groupware
6. Home Shopping
7. Games
8. Virtual Reality
9. Digital Video Editing and Production System

8. CONCLUSION

In this paper, the method we used that generates summaries for trending topics. Where it contains multiple media types, such as image and text. The result shows that given input is any combination like, .text, .docx, .jpg, .MP3, .MP4, .avi, etc. files and output are automatically generated textual summary which shows within time. the MMLDA was used to discover various subtopics as well as the subtopic content distribution from the system, which gives the correlation between different media types.

Based on MMLDA, summarizer is used to generate both textual and visual summaries. Where it gives high quality textual summary at subtopic level.

9. REFERENCES

1. P. Sinha, S. Mehrotra, and R. Jain, "Summarization of personal photologs using multidimensional content and context," in Proc. 1st ACM Int. Conf. Multimedia Retrieval, 2011, p. 4.

2. H. Lin and J. Bilmes, "Multi-document summarization via budgeted maximization of submodular functions," in Proc. Human Lang. Technol.: Annu. Conf. North Amer. Chapter Assoc. Compute. Linguistics, 2010, pp. 912–920.

3. M. S. Bernstein, B. Suh, L. Hong, J. Chen, S. Kairam, and E. H. Chi, "Eddi: Interactive topic-based browsing of social status streams," in Proc. 23nd Annu. ACM Symp. User Interface Softw. Technol., 2010, pp. 303–312.

4. P. Goyal, L. Behera, and T. M. Mcginnity, "A context-based word indexing model for document summarization," IEEE Transactions on Knowledge Data Engineering, vol. 25, no. 8, pp. 1693–1705, 2013.

5. D. Chakrabarti and K. Punera, "Event summarization using tweets," in Proc. 5th Int. AAAI Conf. Weblogs Social Media, 2011, pp. 66–73.

6. J. Bian, Y. Yang, H. Zhang, and T.-S. Chua, "Multimedia summarization for social events in microblog stream," IEEE Transactions on Multimedia, vol. 17, no. 2, pp. 216–228, 2015.

7. Z. Li, J. Liu, J. Tang, and H. Lu, "Robust structured subspace learning for data representation," IEEE transactions on pattern analysis and machine intelligence, vol. 37, no. 10, pp. 2085–2098, 2015.

8. W. Y. Wang, Y. Mehdad, D. R. Radev, and A. Stent, "A low-rank approximation approach to learning joint embeddings of news stories and images for timeline summarization," in NAACL-HLT, 2016, pp. 58–68.