Ad Analysis using Deep Learning

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ABSTRACT

In this paper we analyse the type of video and suggest advertisements accordingly. Advertisement is a communication medium between the producer and the folk, that allure the eyes, make them buy the product. One of the widely seen example is YouTube and other websites used for uploading videos which streams Ads for seconds. The main problem seen is that most of the ads shown are irrelevant of the watched content. The proposed system uses the concept of deep learning by right recommendation of ads, based on the content of the video being uploaded by the user. This analyses the content and provides the related advertisement by classifying them to make video advertisements being displayed more relevant to the content of video being watched.

Keywords*: Advertising, Categorising, Classifying, Deep Learning.*

I. INTRODUCTION

Deep learning is a study of artificial intelligence(AI), to learn multiple levels of representation by using a hierarchy of multiple layers. It provides a very flexible, universal, learnable framework for representing world, visual and linguistic information. It is a subset of machine learning which allows monotonous tasks to be solved for which a procedural or the logical approach would not be possible but deep learning is preferable as it can learn and make intelligent decisions on its own.

In this paper we present an approach used to classify the ads dynamically as per the videos being uploaded after knowing their category (our input).

II. II. RELATED WORK

III.

IV. A. Applications of Video-Content Analysis

Here videos are alleged as a document. Video indexing is related to text document indexing, where a structural analysis is achieved to molder a document into paragraphs, sentences, and words, before building keys. Video document is segmented into shots and scenes to create a table of contents, and should extract key frames or key sequences as index entries for scenes or stories. A typical scheme of video-content analysis and indexing, as planned by many researchers, involves four primary processes: feature extraction, structure analysis, abstraction, and indexing.

B. Object detection and tracking

It is recognizable that all image processing techniques can be useful to individual frames of a video. The contents of two consecutive frames are usually closely linked. Visual content can be displayed as a hierarchy of abstractions. At the first level are the raw pixels with color or brightness information. Additional processing yields features such as edges, corners, lines, curves, and color regions. A higher abstraction layer may combine and interpret features as objects and their attributes. At the highest level are the human level concepts involving one or more objects and interactions among them. Object detection in

videos involves verifying the presence of an object in image sequences and possibly locating it accurately for recognition.

C. Application for Video Analysis Based on Machine Learning

This proposed system consists of five consecutive stages: face detection, face tracking, gender recognition, age classification and statistics analysis. Ada Boost classifier is developed for face detection. A reform of Lucas and Kanade algorithm is introduced on the stage of tracking. Novel gender and age classifiers based on adaptive features and support vector machines are offered. All the stages are united into a single system of viewer analysis. The proposed software complex can find its applications in different areas, from digital signage and video observation to automatic systems of accident avoidance and intelligent human-computer interfaces.

III. PROPOSED APPROACH

We recognize the context of the video by running object and voice recognition algorithms for a video and video's audio respectively. The algorithm first extract the frames of the video and the entire audio, this is done. The frames obtained are studied and ensured of no repeating frames, object recognition algorithm is then run on these frames. Speech recognition algorithm on the extracted audio is further processed. Both these programs will return the words recognised from the two inputs. From frames it may be words that are in the frames, or words that describe the objects in the frame, similarly from the audio it would be the words that are recognized. Here we are keeping our subset to the English language only but will recognise all languages and print in English. These words were then fed into another algorithm which predicted the context of these words, essentially it is a text analyser.

IV. IMPLEMENTATION

The notion behind advertisement analysis is described as four fold: integration, object identification, frame extraction, audio extraction. The process of analysing video is done at single time by above modules. Firstly, discussing the concept of frame extraction in this video is analysis and frames of various sizes are extracted and are saved as images. These frames are then used for recognising what type it is, which is further used for classification. Object recognition can be explained using tensor flow algorithm which analyse frames that are extracted previously and identifies the object be it in a running or ideal state and it is given as an input to the next module. Similarly, studying the module Audio Extraction, it also obtains an audio as output and is saved in the format "out.wav". This wav format is then recognised by a speech recognition, we are using here speech recognition supported by Google and it produces a text as output of the respective audio. Finally, all these modules are integrated.

Briefly, it can be explained as an advertisement is classified using Audio Extraction, Object Recognition, Frame Extraction and further integrate these to obtain the text format of these.

V. CONCLUSION

The accuracy of results may not be 100%, we envision that this approach is promising. With further extensions such as user interface say a Tinker UI which can be used as a user login in which the user will upload videos. These video categories will be requested to be entered by the user. Depending upon this, the advertisements being classified earlier will be suggested after studying the type of video. Algorithms for speech recognition can be improved so as to take the high pitch tunes also into consideration. On each updating of advertisements that are being released daily, we will be updated and will refine the set of advertisement database within a period of weeks. To conclude, we propose that this approach is a feasible approach with the amount of advertisements being viewed each day.

VI. *REFERENCES*

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