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REVIEW ARTICLE

BEHAVOURIAL ANALYSIS OF CHILD USING IBM MULTIMEDIA ANALYSIS AND RETRIEVAL SYSTEM

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ABSTRACT

In today's life everyone is busy in his work, so, most of us give less attention to our children; on the other hand there are some families who are more than enough attentive to their children, which he or she does not like. Most of the parents do not want to know what the interest of their child is and what he or she want to do? They weighted the child with their own aim and continuously questioning him/her about their studies more than required. They want that their child spend 8-10 hours daily for his studies. If the child is doing some creative work such as drawing and making something, parents starts abusing him and start saying to pay attention to his/her studies. In some of the families the environment of their home is not good; means there is frequent quarrell between the parents. This gives the bad psychologist effect on his mind. When this happens regularly the child get depressed and in last try to end his/her life. So this is the essential duty of the parents and the school , where the child spends 8 hours daily to look insight the child and give him proper counseling if there is some problem with the child.

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INTRODUCTION

A new idea is proposed to overcome this problem, the idea is to show child 50 of images of various activities, things, scenery etc., such as quarrel between the parents, sea, rising sun, playing with parents and friends, abusing by parents and teachers etc. and told child to select images what he or she do and sees in his/her daily life. Images play a big role in representing the inner feeling of the child or a person. Images are created in his/her memory of the daily things happening in his/her life. Then the images selected by the child reflect the visual insight of the child and by analyzing the images, give proper counseling to the child. As there are lots of children in the school, so, manually doing this becomes a tedious job. The proposed system inputs the images selected by the user, and automatically analyzes the images and reveals the inner feeling, activity and interest of child an so be able to give child the proper counseling. The proposed system uses the Visual Recognition service which is unique in its approach to automatically annotating images based on visual content alone, processing the pixels of an image. The service uses semantic classifiers built with machine-learning technology to recognize visual entities such as settings, objects, and events based on content such as color, texture, shape, and edges. If the service does not provide a classifier specific to the needs, the service can learn from images provided. To perform better, sets of images are used to train new custom classifiers (The service is based on the IBM Multimedia Analysis and Retrieval System, or IMARS). It uses deep learning algorithms to analyze images that can give you insights into your visual content. We can organize image libraries, understand an individual image, and create custom classifiers for specific results that are tailored to your needs. It allows users to understand the contents of an image or video frame, answering the question: "What is in this image?" Submit an image, and the service returns scores for relevant classifiers representing things such as objects, events and settings. The Visual Recognition services come with a set of built-in classes so that you can analyze images with high accuracy right out of the box. You can also train custom classifiers to create specialized classes, and create custom collections to search for similar images.

IMARS

IBM Multimedia Analysis and Retrieval System (IMARS) is a powerful system that can be used to automatically index, classify, and search large collections of digital images and videos. IMARS works by applying computer-based algorithms that analyze visual features of the images and videos, and subsequently allows them to be automatically organized and

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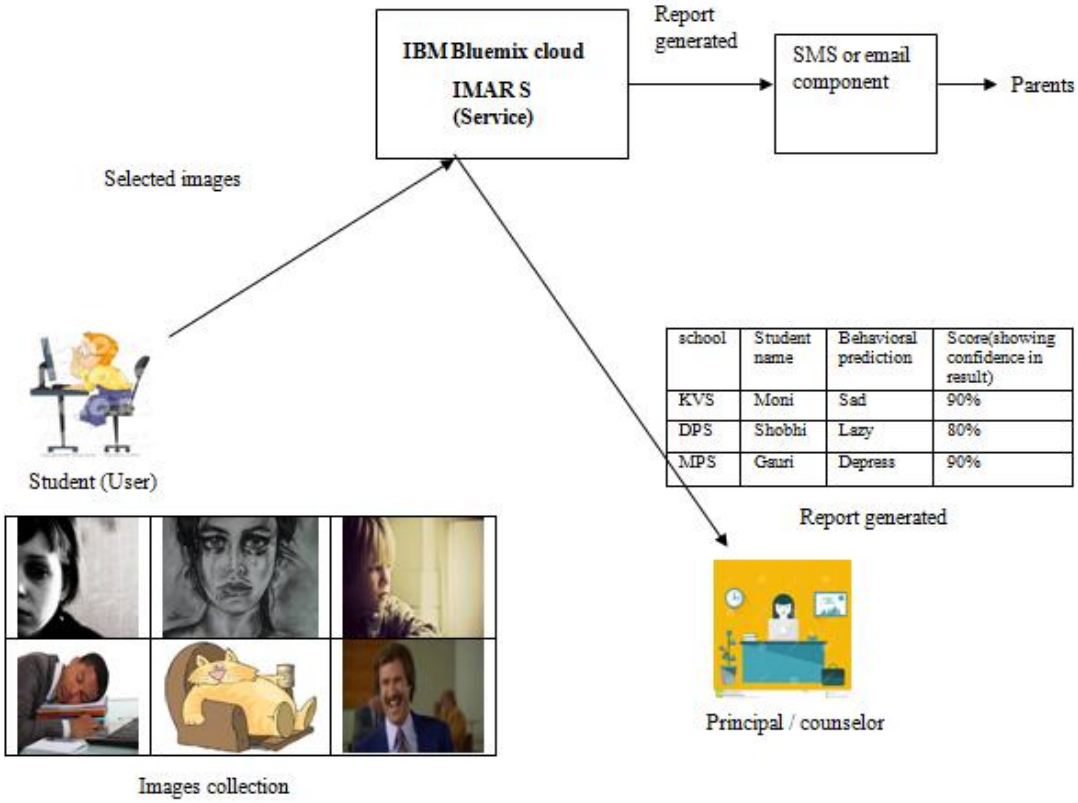
searched based on their visual content. In addition to search and browse features, IMARS also:

1) Automatically identifies, and optionally removes, exact duplicates from large collections of images and videos
2) Automatically identifies near-duplicates
3) Automatically clusters images into groups of similar images based on visual content
4) Automatically classifies images and videos as belonging or not to a pre-defined set (hereafter called taxonomy) of semantic categories (such as 'Landmark', 'Infant', etc.)
5) Performs content-based retrieval to search for similar images based on one or more query images
6) Tags images to create user defined categories within the collection
7) Performs text based and metadata based searches.

2) The second category is visual semantic extraction, which works by applying machine learning techniques to the extracted visual descriptors. IMARS is supported by a broad array of pre-trained semantic classifiers that automatically identify whether each new image and video belongs to one or more of the pre-defined semantic categories in the taxonomy based on its extracted visual descriptors. IMARS provides additional capabilities based on unsupervised classification that cluster the images and videos purely based on their extracted visual descriptors, without assigning them any label, and allow searching based on visual similarity. The IMARS search tool provides a graphical interface which allows the user to search, browse and navigate the collection based on the values produced by the analyses performed by the IMARS extraction tool.



school	Student name	Behavioral prediction	Score(showing confidence in result)
KVS	Moni	Sad	90%
DPS	Shobhi	Lazy	80%
MPS	Gauri	Depress	90%

IMARS is comprised of the IMARS extraction tool and the IMARS search tool. The IMARS extraction tool takes a collection of images and videos from the user, and produces indexes based on mathematical analyses of each piece of content. These indexes organize the results of the analyses for the IMARS search tool. The IMARS extraction functionality is enabled by two main categories of computer algorithms that work together to bridge the "semantic gap" for images and videos:

1) The first category is visual feature extraction, which works by using the computer to analyze the pixel-level contents of each image and video, and create a multi-dimensional vector description of its visual features. Since there are many important dimensions of visual contents, such as color, texture, shape and spatial layout, IMARS utilizes a large set of visual feature extraction algorithms that extract descriptors across a wide array of visual dimensions.

The IMARS search tool presents the results of a query in different formats, among which the user can decide and switch according to his preferences. One consists of mosaic overview images that provide a simple at-a-glance summary of each of the main categories extracted. Another is a word-based representation. The tool also allows drilling-down for more details, for example, to provide a sorted list of matches for each semantic category, or to provide the full set of extracted semantics for each image or video key-frame. Student selects the images from the collection of images which are send to IMAR by a program loaded on the user's machine. The IMARS extraction tool takes a collection of images and videos from the user, and produces indexes based on mathematical analyses of each piece of content. These indexes organize the results of the analyses for the IMARS search tool. Then IMARS generates the report as shown in the figure above and delivers the report to the principal's login of the school. The generated reports can also send to parents by E-mail or by SMS. The report by IMARS is in JSON form .This is further

converted in tables to deliver reports in the school or to the parents.

JSON format

The JSON format is syntactically identical to the code for creating JavaScript objects. Because of this similarity, instead of using a parser (like XML does), a JavaScript program can use standard JavaScript functions to convert JSON data into native JavaScript objects.

JSON Example

```
<!DOCTYPE html>
<html>
<body>

<h2>JSON Object Creation in JavaScript</h2>

<p id="demo"></p>

<script>
var text = '{"name":"John Johnson","street":"Oslo West 16","phone":"555 1234567"}';

var obj = JSON.parse(text);

document.getElementById("demo").innerHTML =
obj.name + "<br>" +
obj.street + "<br>" +
obj.phone;
</script>
</body>
</html>
```

Conclusion

This proposed system with Visual Recognition service is unique in its approach to automatically annotating images based on visual content alone and processing the pixels of an image. It will help us in studying the behaviour trait and thinking of each child. This IBM Visual Insights service will allow us to derive value from collections of photos. It extracts visual insights related to activities, places, interests and people to deliver a comprehensive view of what you or your users are communicating through visual media. It will be useful to our future generation to be perfectly counselled when needed. Thus the proposed work increases the efficiency to automate the process for discovering the behaviour change among pupils.

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