Multiple Lecture Video Annotation And Conducting Quiz Using Random Tree Classification

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ABSTRACT-In the modern days, the institutes of education are showing more interest in the field of E-Learning or in the field of internet based educational services. The growth of video lecture annotation tools also plays an essential role in the education environment. At first, the CLAS (Collaborative Lecture Annotation System) was limited to a single study-test episode .To deal with challenge we are proposing MLVA (Multiple Lecture Video Annotation) tool, developed to make the extraction of important information. The primary of concept MLVA is straight forward. While watching a video captured lecture, each student indicates key points in the lecture by a simple button press. Each button press represents a point-based semantic annotation and indicates, "For this user somewhat important happened at this point in the lecture." The system relies on semantically constrained annotation, post-annotation data amalgamation and transparent display of this amalgamated data. As a future enhancement focus on conducting Quiz to the students and Instructor. Keywords: CLAS, MLVA

I. INTRODUCTION

In educational contexts, MRAS (Microsoft Research Annotation System) which was familiar as well as well- researched platforms for two-way video annotation. This MRAS system represents the annotations as well as the slides which are anchored based on time points in the lecture. In proposed work, multiple lecture videos are available to the users and performance of the users can be known by conducting Quiz. So, MLVA is used to extract essential information from the multiple videos and also to communicate with students and instructors. Annotations can be done after watching the video. Based on the annotations graph will be available to the other users. And then finally, conducting the quiz to each and every student's for analyzing their strength like poor, average, good by using data mining technique. (i.e. Random tree classification Algorithm). As well as to focusing on the instructor-based user.

II. RELATED ARTICLES

Many Video Lecture Annotation methods have proposed. Further there are many methods proposed on video lecture annotations.

Mark J. Weal, Danius T. Michaelides et al. [1] KevinPage developed a paper for skill-based learning environment. It is used in learning process for decision making, statement and problem- solving. The semantic annotation is used in real time annotations of these simulations for debriefing of the persons, person study and better analysis of the learning approaches .It provides an efficient learning environments to the students using learning materials such as videos, audios etc. Simulations are used to promote the acquisition of practical skills as well as decision making, group working, communication and difficult solving. Annotations are their simplest, just metadata, but by providing annotations with significance, defined by ontology's -semantic annotations.

S. Chandra et al. [2] developed a paper for lecture videos to capture the different modalities of a class interaction makes them a good review tool. Multimedia capable devices are omnipresent among contemporary students. They depend on the university to provide the video capture infrastructure. Some universities use skilled videographers. Though they produce tremendous videos, these efforts are high-priced. Several research projects mechanize the video capture. However, these research prototypes are not willingly deployable because of organizational

constraints. Rather than waiting for the university to provide the necessary communications, we show that instructors can face-to-face capture the lecture videos using off-the shelf components. Consumer grade high description cameras and powerful individual computers allow instructor captured lecture videos to be as effective as the ones captured by the university.

Markus Ketterl, Johannes Emden et al.[3] developed a paper for Social Navigation tool. It is used for online learning materials such as hypertext. It is used to guide users through collections of learning material by following other users' traces. This allows users to easily identify which material attracted more other users. This paper presents an implementation of a multimedia web lecture interface that allows users to visualize and re-use aggregated actions taken from other users past interaction for enhanced navigation and multimedia retrieval.

Christoph Hermann and Thomas Ottmann et al. [4] developed a paper for integration of a Wiki with lecture recordings. The integration between a Wiki and lecture materials allows the students to elaborate on the topics they learn as well as thoroughly discuss the topics. Since there is no direct contact with other students or the teacher while learning with lecture recordings at home—compared to a live lecture—it would be useful to explore using a tool to support the collaborative creation of learning materials in a Wiki while maintaining a direct relation to the employed lecture recordings helps the students. But of course just implementing a lot of different tools does not improve the quality of the lectures. This would also involve training the lecturers to make further use of multimedia

B. Hosack, C. Miller, and D. Ernst et al. [5] developed a paper for the boundaries of video annotation in education by outlining the need for extended communication in online video use, identifying the challenges faced by existing video annotation tools, and introducing Video- ANT, a tool planned to create text-based annotations integrated within the time line of a video hosted online.

J. Steimle, O. Brdiczka, and M. Muhlhauser et al. [6], developed a paper which is based on pen and paper model. The paper presents Co Scribe, a concept and prototype system for the combined work with printed and digital documents. It is based on pen and paper model that is used to link and tag both digital and printed documents. Co Scribe provides for a very seamless integration of paper with the digital world, as the similar digital pen and the same communications can be used on paper and displays. Instead of using Graphical user interface, the traditional practices provide rich interaction for pen and paper based models. Co Scribe provides three central and generic activities of working with documents and enables. Co scribe provides only minimal overhead on annotation process and provides more efficient on retrieval of documents.

Ronald Schroeter, Jane Hunter, Douglas Kosovic et al.[7] developed a number of research groups and software companies have developed digital annotation tools for textual papers, web pages, images, audio and video resources. By annotations we mean subjective remarks, notes, explanations or external remarks that can be attached to a document or a selected part of a document without actually modifying the document. When a user retrieve a document, they can also download the annotations attached to it from an annotation server to view their peer's opinions and perspectives on the particular document or to add, edit or update their individual annotations. The ability to do this collaboratively and in real time during group discussions is of great interest to the educational, medical, scientific, cultural, security and media communities.

III. SUMMARY OF EXISTING SYSTEM

In the existing system, the CLAS was limited to a single study-test episode so that only single recorded video played in the tool. It is does not conduct any quiz for the students usually. So the serious problem arises to handle the student. Also this system didn't get any positive feedback or negative feedback from the students and as well as it does not focusing on instructor based annotation.

IV. PROPOSED SYSTEM

In the proposed system, extracting the essential concepts from the lecture video is very quick for the users. In order to tackle this challenge MLVA (Multiple Lecture Video Annotation) is introduced in this project. The proposed work is mainly to analyze the strengths we are introducing the quiz concept. This quiz concept is based on data mining technique (i.e. Random tree classification algorithm) to classify the student strengths like poor, average, good etc. As well

as in proposed system focusing on instructor point-based annotation.
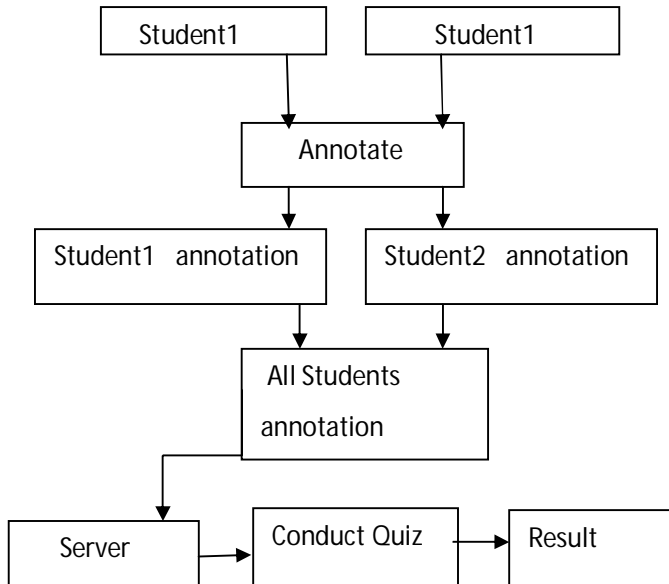
V. BLOCK DIAGRAM

Figure: 1

VI. IMPLEMENTATION

In Implementation mainly focus on modules. The modules are

- Multiple Lecture Video
- User's process
- Process Of Individual Annotation
- Process Of Group Annotation
- Quiz Test Module

A. Multiple Lecture Video

Initially, the videos are recorded (multiple lecture video) and play in the MLVA tool. Here each and every user watching the captured lecture video for Play multiple lectures and extend over a longer time frame for a detailed assessment to the users (students and instructors).

B. User's Process

User's watch the lecture and annotate lecture by pressing a button or left click on mouse to indicate an important points. Each button press represents a point-based semantic annotation and indicates, "For this user somewhat important happened at this point in the lecture".

C. Process of Individual Annotation

Once finished, a student's point-based annotations are saved in a file on a server. Each user's has his or her own personal set of annotations associated with each lecture. When the learner revisits the lecture material (e.g., review of course material) they have the opportunity to upload their annotations. Once uploaded, the annotations are graphically offered in what we refer to as the individual graph. Individual graph represents time in the lecture and the student's annotated points.

D. Process of Group Annotation

Multiple Lecture video Annotation (MLVA) Tool emerges when the software takes the individual point-based annotations and amalgamates them. Each User's personal set of annotations is amalgamated into a single graph. This group graph represents the consensus representation of the structure of the important events in the lecture.

E. Quiz Test Module

Finally conduct the quiz to every student for to know about the performance of the particular student then use random tree classification algorithm for analyzing their strength like poor, average, good.

VII PERFORMANCE EVALUATION

The proposed system contains conducting Quiz to the students in order to evaluate the performance of the students. The existing system does not conduct any quiz and contains only adding annotations to the lecture video, generating individual graph and group graph.
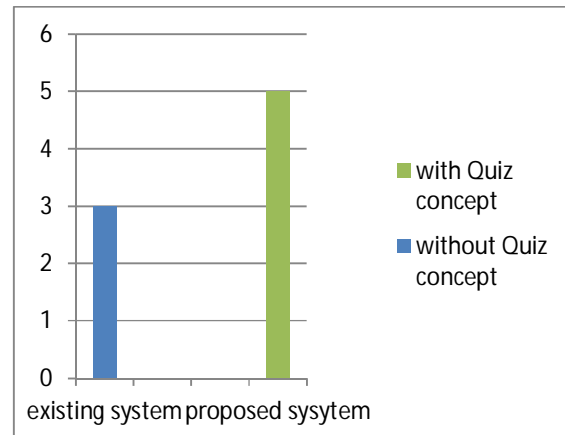

Figure: 2

In the above figure: 2 describes about performance of existing and proposed system where the performance of proposed is high compared to the existing. Proposed system focuses on conducting Quiz so that the performance of the students can be evaluated

VIII CONCLUSION

In this paper a new tool was designed for student and instructor based annotation. The MLVA (Multiple Lecture Video Annotation) tool has been developed to make the extraction of important information a more collaborative and confirmed process. As well as conducting the quiz to each and every student's for analyzing their strength like poor, average, good by using data mining technique. (I.e. Random tree classification Algorithm). The MLVA tool has more efficient for user support. The results of the user study were positive and encouraging for future development of the MLVA.

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