How Effective is AI in Whiteboard?

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1 ABSTRACT

A whiteboard is an effective and interactive tool. Earlier people were using blackboard, but nowadays we prefer to use whiteboard instead because of its versatility. It is being used in explaining a concept, visualizing ideas, brainstorming and presenting information, group collaboration etc. For people who are working or studying remotely online interactive whiteboards came into existence. An online whiteboard is a protean digital tool that emulates the functionality of a physical whiteboard in a virtual space. The beauty of an online whiteboard lies in its capability to grease real- time collaboration and communication among individualities or brigades, anyhow of their geographical locales. There are different online whiteboards that are present in market today e.g. Miro, Limnu, Microsoft whiteboard etc. Artificial Intelligence is one emerging technology in IT field which is useful in almost every sector. There are many researches on how AI is useful in education and professional environment. In this paper we have researched about how AI can be used to make whiteboard more effective.

Keywords:-Artificial Intelligence, whiteboard, protean, brigades.

2 INTRODUCTION

As stated earlier, a whiteboard is a tool used for many reasons such as explaining a concept, visualizing ideas, brainstorming and presenting information. Traditional whiteboard limits its usage to a certain extent. It is not portable and requires the use of a marker pen and duster, which is not a great option in an era where the technology is evolving. Digital whiteboard promotes visual thinking, encourages active participation, and fosters a sense of participated understanding among platoon members. It also eliminates the constraints of physical propinquity and time zones, allowing brigades to unite efficiently in real time. Whether used for brainstorming sessions, design planning, tutoring, or presenting, an online whiteboard provides a dynamic and flexible space for driving effective collaboration. Digital whiteboard provides interactive conversation, attestation and availability, integration with other tools, enhanced creativity and invention, and much more AI in education is not just limited to creating humanoid robots to replace human teachers but to make use of computer intelligence in teaching and learning and make education system effective and better.

3 LITERATURE REVIEW

1. HANDWRITING RECOGNITION OF WHITEBOARD NOTES-STUDYING THE INFLUENCE OF TRAINING SET SIZE AND TYPE

In this paper, it's presented that handwriting recognition system for whiteboard notes. Notes written on a whiteboard is a new modality in handwriting recognition exploration that has entered fairly little attention in the history. They added some online preprocessing styles to recover vestiges produced by the recording system. To achieve a better recognition performance, applied state- of- the- art styles, similar as optimization of the number of countries and Gaussian admixture factors, and including a statistical language model. First, they used fresh data from the IAM- Database. The recognition rate could be significantly increased by4.2 to68.5 chance by training on mixed training data. Second, they used a larger database of handwritten notes acquired on a whiteboard, videlicet the IAM- OnDB. With the alternate database, the recognition rate could also be increased, by2.1 to66.4 chance. This increase is statistically significant as well. They eventually, combined both database into one large training.[3]

2. ARTIFICIAL INTELLIGENCE BASED LANGUAGE TRANSLATIONPLATFORM

The proposed system by authors uses apre-trained model from Google restatement API; hence, it can support numerous languages, including English and Arabic. The proposed frame was constructed with the aid of AutoML, which is a Google restatement module. The(English Language Translation Framework) ETF system affords four advantages. First, bus- discovery language is supported when a stoner doesn't know the source language, the ETF automatically identifies it. Second, the ETF has glossary support the glossary of Google restatement API allows the storehouse of restated words and rulings. Third,batch-wise restatement is possible This allows the network director to reduce the network cargo of rephrasing large input lines. Fourth, Google REST API can be integrated into the system this reduces the burden of textbook birth from documents. Consequently, the use of the ETF as a centralized restatement service is proposed to ameliorate pupil- acquainted literacy issues.[2]

3.CAMERA-BASED WHITEBOARD READING FOR UNDERSTANDING MIND-MAPS

In this paper,the authors have developed a camera- grounded whiteboard reading system, which particularly addresses the analysis of hand- drawn mind charts. Mind maps ' spatial arrangements of handwritten ideas in graph- suchlike conformations are important means for,e.g., structuring the results of brainstorming sessions as they're generally held in creative thinking and problem working processes. Feting mind charts from whiteboard images is applicable since it generates digital representations of similar hand- drawn documents, which allows for storehouse and reclamation, i.e., digital asset operation. The specialized benefactions of this paper correspond of i) a textbook discovery procedure, which automatically excerpts handwriting in whiteboard images using a statistical classifier that has been trained on shape features uprooted from connected factors, thereby avoiding inordinate use of thresholds; ii) a

new approach for unsupervised layout analysis that recovers the graph- suchlike spatial arrangements of ideas captured by mind charts using clustering ways; and iii) unconstrained handwriting recognition using HMM- grounded recognizers and in particular fastening on parameter estimation procedures that use outofdomain sample data for effective system bootstrapping. We estimated the advanced system in an experimental evaluation on unconstrained mind chart data. The achieved results are veritably promising for the envisaged operation of camera grounded mind chart reading, for illustration, to automate commercial document work flows with respect to meeting summarization.[4]

4.A DEEP LEARNING-BASED PIPELINE FOR TEACHING CONTROL THEORY:TRANSFORMING FEEDBACK CONTROL SYSTEMS ON WHITE-BOARD INTO MATLAB

In this paper, the authors handed a DL grounded channel that provides the occasion to the speakers experimenters to fantasize and dissect HFCAs during a lecture by transubstantiating the HFCA into Matlab R in real- time. To negotiate such a thing, the fabrics of deep literacy, pattern recognition and image processing have been integrated in a new channel. We handed all the details necessary information to construct the proposed DL grounded channel. In the channel, they integrated deep CNNs to break the pattern recognition problems, HCAR and HCR, in order to capture and handle the intraquality andinter-quality misgivings that substantially do due to handwriting quality of the speakers and lighting conditions. They handed real- time experimental results conducted in a small- sized classroom and easily showed that the DL grounded channel is a important tool to fete HFCAs and to fantasize as it directly uses the advantages of Matlab R. It's also worth to accentuate that the developed DL grounded channel is able to transfigure the HFCAs on the whiteboard into Matlab R in real- time and therefore is able to modernize the FCA generated in Matlab R if there's a revision in the HFCA. We suppose that the DL grounded channel has the implicit to ease the difficulty in tutoring control systems as real- time visualizations of control systems and simulations are generated as the speaker is sketching FCAs during the lectures. As for our unborn work, we plan the addition of separate- time HFCAs, only the character " z " has to be included as a marker in HCR problem, and continuous and separate time state space models. We believe that the proposed DL grounded channel can be also employed in farther operation areas similar as grading handwritten schoolwork of scholars which has also the implicit to lessen the burden of lectures in grading them. On the other hand, scholars can also use the DL grounded channel in a analogous manner in order to fantasize HFCAs in their lecture notes.[1]

4 ANALYSIS OF STUDY

4.1 VOICE ASSISTANT

Voice assistant is a virtual assistant which uses voice recognition technique to execute the task given by the user. Voice recognition is being used in many applications such as Alexa, Siri, Google Assistant etc. We can get Voice Assistant in whiteboard. It will ease out the work of user. It will allow users to make their work done without using hands for tasks such as writing down notes or to manually click on option on whiteboard to get work done

4.2 GENERATING FLOWCHART

Reading a whole textbook could be a tedious job. It would be better if we get properly aligned important points from the text. Adding them into a flowchart would be much easier to understand .We can add this feature in whiteboard to give better performance to users.

4.3 SUGGEST NEW IDEAS

Whiteboard is being used by professional sector too.It is used to brainstorm new ideas,for training new employees etc.Installing AI in whiteboard will be more efficient to use.Through various algorithms AI will be able to suggest new ideas on given topic

4.4 LANGUAGE TRANSLATION

The language translation process acts as a bridge between linguistic and cultural gaps to convey a message accurately in another language. It requires a deep understanding of both the source and target.Whiteboard is used by people all around the world.Professionals also use whiteboard while hosting online meetings,to keep the session interactive.AI can be used to translate the language to the people of different dialects.

4.5 CONVERT TEXT FROM IMAGE INTO EDITABLE TEXT

Sometimes we need to type text from image.It is a time consuming task.It would be much more easier if we can just scan the image and the text from it is automatically converted to editable one.This is possible with the help of AI algorithms.

5 CONCLUSION

This research underscores the effectiveness of AI in whiteboard applications, showcase its enhance productivity, and offer innovative solutions. The findings through the research papers reviewed above highlight the positive impact of AIdriven features, such as automated content generation and intelligent analysis, which improves user experiences. However, ongoing developments, user adaptation, and the potential limitations is important in fully realizing the potential of AI in whiteboard technology. As AI continues to advance, the integration of these intelligent tools holds promise for revolutionizing communication and problem-solving in various professional and educational settings.

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