Answer Evaluation Using Machine Learning

Prince Sinha
Thakur College of engineering and technology, Mumbai

Sharad Bharadia
Thakur College of engineering and technology, Mumba

Ayush Kaul
Thakur College of engineering and technology, Mumbai

Dr. Sheetal Rathi
Associate professor, Thakur College of engineering and technology, Mumbai

***Abstract* — In this modern age, where the world moves towards automation so, there is a need for automation in answer evaluation system. Currently, the online answer evaluation is available for mcq based question, hence evaluation of the theory answer is hectic for the checker. Teacher manually checks the answer and allot the marks. The current system takes more manpower and time to evaluate the answer. In this journal an application based on the evaluation of answers using machine learning. The objective of the journal is to specially reduce the manpower and time consumption. Since in manual answer evaluation, the manpower and the time consumption is much more. Also, in the manual system, it may be possible that the marks given to two same answers are different. This application system provides an automatic evaluation of answer based on the keyword provided to the application in form of the input by the moderator which will provide equal distribution of marks and will reduce time and manpower.**

Keywords — OCR, Backpropagation algorithm, ReLU, ANN, CNN, RNN, CRNN

INTRODUCTION

Manual answer evaluation is a very tedious task. The manual checking is very time consuming process and also requires lots of manpower. Also, the paper checker is not able to give marks equally. So, our system will evaluate answer based on some keyword and also manpower will be saved. Only one has to scan the paper then, based on the keyword in the answer the system will provide the marks to the question according to the dataset present. Also, By this system, the evaluation error of the marks to the particular question will be reduced.

So, our system will evaluate answer based on some keyword and also manpower will be saved. Only one has to scan the paper then the system will split the answer using OCR[1], based on the keyword in the answer the system will provide the marks to the question according to the dataset present [2]. There is a need for such application which will provide an easy evaluation of answer and can provide eligible marks. Also, this application will help various colleges, university, coaching institute to evaluate the answer in less time and with less manpower.

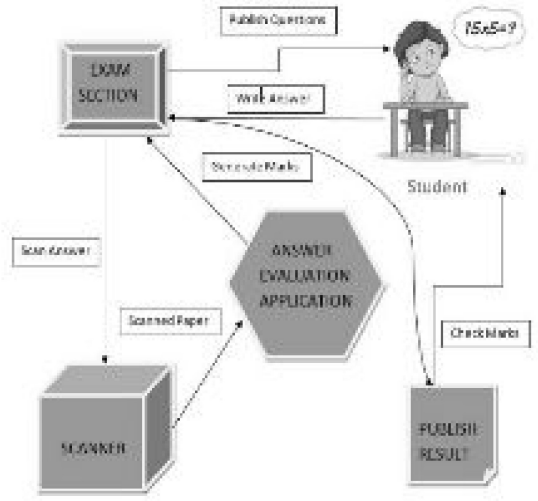

Figure 1. Overall architecture of the system

Checking answers requires high concentration for the large amount of time which often leads to mistakes. The automation of this task will increase the efficiency of answer evaluation on a large scale. After a brief discussion, it was understood that answer sheet is evaluated keeping in mind certain keywords that moderators search for the answer while evaluating an answer. Our proposed algorithm will require keywords as inputs. These keywords will be provided by the subject expert. Our proposed algorithm will match these keywords with detected words that are extracted from the answer sheet using supervised learning algorithm. Learning phase of the model will require handwritten dataset[3] for English language alphabets. These datasets are available online in various formats to be used to train the model. The machine learning model used in our proposed algorithm is

neural networks with multiple hidden layers. The model calculates the error using backpropagation[8] algorithm. The weights of the network are updated in the direction opposite to