
Answer Evaluation Using Machine Learning

Ayush KaulThakur College of engineering and technology, MumbaiSharad BharadiaThakur College of engineering and technology, Mumbai Prince SinhaThakur College of engineering and technology, Mumbai.

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 allow the marks. The current system takes more manpower and time to evaluate the answer. This project is an application based on the evaluation of answers using machine learning. The project is developed specially to 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 dataset by the user which will provide equal distribution of marks and will reduce time and manpower. Keywords—OCR, Backpropagation algorithm, ReLU, ANN Introduction (Heading 1)Manual answer evaluation is a very tedious task. The manual checking is a 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, With 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[3], based on the keyword in the answer the system will provide the marks to the question according to the dataset present [4]. 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.

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

Need help with the assignment?

Our professionals are ready to assist with any writing!

[GET HELP](#)

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 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 algorithm. The weights of the network are updated in the direction opposite to the partial differentiation of error with respect to weighted input to the neuron in a particular layer. The activation function used for the model is ReLU (Rectified Linear unit) which calculates as: $f(x) = \max(0, x)$. Here the variable x is an input to the function. Our proposed algorithm will also consider the length of the answer as a parameter for evaluation of the answer. The ideal answer length will be taken as an input from the teacher.

“An Approach to Evaluate Subjective Questions for Online Examination System” research paper by Sheeba Praveen, Assistant Professor, Dept. CSE, Integral University, Lucknow, U.P, India. In recent years we have seen that a number of governments, semi-government examinations are gone online, for example [IBPS Common Written Examination (CWE)]. This system or any other such systems are advantages in terms of saving resources. However, we have observed that these systems cater only multiple choice questions and there is no provision to extend these systems to subjective questions. Our objective is to design an algorithm for the automatic evaluation of single sentence descriptive answer.

The paper presents an approach to check the degree of learning of the student/learner, by evaluating their descriptive exam answer sheets. By representing the descriptive answer in the form of graph and comparing it with the standard answer are the key steps in our approach. B Vanni, M. Shyni, and R. Deepalakshmi, "High accuracy optical character recognition algorithms using learning array of ANN" in Proc. 2014 IEEE International Conference on Circuit, Power and Computing Technologies (ICCPCT), 2014 International Conference. Optical Character recognition refers to the process of translating the handwritten or printed text into a format that is understood by the machines for the purpose of editing, searching, and indexing. The Performance of the current OCR illustrates and explains the actual errors and imaging defects in recognition with illustrated examples. This paper aims to create an application interface for OCR using the artificial neural network as a backend to achieve high accuracy rate in recognition. The proposed algorithm using neural network concept provides a high accuracy rate in recognition of characters. The proposed approach is implemented and tested on isolated character database consisting of English characters, digits and keyboard special characters.

Proposed Methodology

Need help with the assignment?

Our professionals are ready to assist with any writing!

[GET HELP](#)

This project is an application for automated answer evaluation using the matching keyword from a dataset based on machine learning algorithm. Some applications are available but they are different than this and they use different methodology. Some available application only evaluates MCQ's (multiple choice questions) not the subjective question[1]. For using this application only one has to scan the answer to that question then the system will split the answer keyword using OCR [3]. Based on keywords written in the answer and the keywords in the dataset, the application will provide marks in the range of 1 to 5. Steps to evaluate the answer Provide answer sheet to the system in jpeg (.jpg) format provide keywords, maximum marks and minimum length required for the answer.

The system will separate words from the given answer the given words will be stored in .csv file the length of the answer will be calculated by counting words from the CSV file check the percentage of keywords matched check the percentage of words written compared to that of minimum length check the percentage of marks allotted for the given percentage of keyword-matched form the graph check the percentage of marks allotted for the given percentage of word length from the graph multiple both the percentage of the maximum marks for the answer display the marks obtained function to calculate % marks for keywords matched(x) = 25 for 0=

Need help with the assignment?

Our professionals are ready to assist with any writing!

[GET HELP](#)