A Counterpart Approach to Attendance and Feedback System using Machine Learning Techniques

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Abstract:Education is one of the wisest aspect that is required to everyone in this country .In this regard as technology widens its width and length especially the paper work is replaced with the technology. As machine learning is one of the domains that deals with the both aspects we need a system that coordinate with the technology which reduces the human effort .Here in this paper we have mentioned an idea that combines two technologies with machine learning approaches.

Keywords **- Machine learning , Attendance, technology Methodology.**

I. INTRODUCTION

As the technology is imparting its roots towards the knowledge technological interventions are being developed now a days .Out of which machine learning is one of the important domain that makes the learning through machines by giving some input and obtaining the output from the given input.Education is the key to open a door called knowledge and it's the weapon to make it a progressive representation and in India educational system consists of only the manual work and now a days with the advancement of technologies like machine learning it's the system that automatically detects the student performance and attendanceMaintenance of student records like attendance and his feedback on the subjects like Maths,English in the school level as well as his records of feedbacks in Engineering colleges is also a difficult measure therefore a system that deserves all the elements of the student level from the scratch is being made available now a days and it has been implemented by recognizing his face his attendance details must be displayed and by his face he can automatically give his attendance as well as his feedback all at once.

Methodology involved
Student Feedback System
Student Attendance Experimental Design
Dataset
Student feedback can be collected using mobile phones, social media and in form of responses to questions in a single sentence, from students who posted their views in online discussion forums.

Evaluation Measures
• Accuracy: Accuracy in classification problems is the number of correct predictions made by the model over all kinds predictions made.

Face Recognition
• Face Detection –
Facial detection is one of the elements of identifying the student record with his identity or the personal recognition where they can probe through detection

• Face Recognition –
Identity of the person through his number or name is the first phase where a student can get the record of the student by recognizing the face of the student Facial recognition is followed by the facial identification where a student's identity can be accessed followed by gathering the attendance record.

Student Feedback System
Step 1: Data collection
Capturing the data from the various sources is also a challenging task and it is done by machine learning with the combination of his attendance identity

Step 2: Data Preprocessing
The data that is captured from facial recognition and facial identification is preprocessed

Step 3: Extraction of Feature Set/Training Data
After the captured data is preprocessed a training data set is extracted from the preprocessed data

Step 4: Implementation of Machine Learning Algorithm on Feature Set/Training Data
Developing a record of set of machine learning existing algorithms to form a new algorithm that is composed of all the data sets

Step 5: Testing on Datasets
The data that is tested on the data sets

Experimental Design
Dataset
A data set of inputs that are read by the machine are given as the data set to read the inputs

Evaluation Measures
Measures such as accuracy and Mean Average Precision (MAP) will be computed for the face recognition. Following are the three ways that can be used to estimate the performance of face recognition based attendance system based on deep learning models in Python using the Keraslibrary:

- Use Automatic Verification Datasets.
- Use Manual Verification Datasets.
- Use Manual k-Fold Cross Validation

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• Accuracy: Accuracy in classification problems is the number of correct predictions madeby the model over all kinds predictions made.

$$Accuracy = \frac{Number\ of\ Correct\ predictions}{Total\ number\ of\ predictions\ made}$$

- **Precision:** It is the number of correct positive results divided by the number of positive results predicted by the classifier.

$$Precision = \frac{TruePositives}{TruePositives + FalsePositives}$$

- **Recall:** It is the number of correct positive results divided by the number of ***all*** relevant samples (all samples that should have been identified as positive).

$$Precision = \frac{TruePositives}{TruePositives + FalseNegatives}$$

THE NEW INNOVATION
With this experiment we can concrete two aspects of learning one is the learning technique that acts according to the choice and the other one is the voice that acts according to the learners input.In the learning techniques especially with regard to the machine learning the characteristics of the learner must be able to understand the outcomes when the learner is giving it as an input

ATTENDANCE
The attendance is going to get captured via the biometric and it is made available as soon as the student and it is to be submitted as soon as the student comes into the classroom the biometric finger print of the student is sent to the parent directly.Whenever a student comes to the college his biometric fingerprint is captured and it is to processed via biometric device and the finger print is captured and it is stored in the computer

ROLE OF MACHINE LEARNING
The major role of machine learning starts from here where a system recognized the finger print of the student the student data is to be captured and the characteristics of the student must be analyzed based on the finger print of the student.This sort of new technology evolving now a days is a bit new and new to do it as a proposal this enhancement is to be made easier and it is to get processed.In order to identify the characteristics of the student via finger print may not be available due to the immense technological development this technology may occur in future in the recent enhanced technological developments and now it is the turn to develop that sort of technological interventions as technology is changing its root day by day.

The following is the methodology in order to bring that sort of technological interventions
Data preprocess
Data Analysis
Data Enrichment
Data Prediction
This process is called as PAEP Process and this is the new name given to this technology.

Data Preprocess
In this type of technology the attendance of the student is captured via fingerprint and the device to capture the attendance is to be made available first.

Data Analysis
In this type of process the data that is captured needed to get analyzed and this analysis is happened only because the attendance that is captured is analyzed based on the number of days a student is going to attend the classes is to be analyzed and enhanced and it is to be sent to the next phase

Data Enrichment
This is a sort of correcting the data that is analyzed and to be enhanced via the testing phase and the enriched data is sent to the next phase

Data Prediction
This is one kind of predicting the data that is right and that is the conduct of the studentThe conduct of the student is measured based on the number of days the student is going to attend the class work via his attendance and it is predicted in this phase.The conduct display of the student is displayed in number of days the student is going to present and it is displayed for every week.This sort of technology makes the student to understand the importance of attendance in the level of school as well as the level of college in order to fulfill his grades especially in order to improve his conduct.As conduct certificate is one of the important certificate that is necessary for every student to act and study higher levels of educationBefore collecting the feedback of the student records there is need to identify the behavior of the student based on the characteristics of the student performance prediction this era can be easily resolved.

Facial recognition
The technique of image processing aligned with machine learning is implied here as here there are two sort of outcomes in this project one is his feedback and the feedback how it helps in improving the performance of the student record.Facial Identification
Facial identification is the record to identify and verify whether the student coming to college with specific roll number is verified and make it as an identifying priority to the system

Facial Characteristics prediction
Based on the facial data his/her characteristics are needed to get predicted automatically by the system following the image processing technique as image processing is capturing the image based on the several set of images a machine is given as an input following the four parameters

Good
Bad
Average
Above Average

These parameters are given to the system once and later the student performance analysis is going to get probed in the marks he/she performed in the exams and this is to be enhanced and make it a progressive measure and it is trained via training data in the system.So the student record burdens that are written manually in the present system are upgraded to a simple app so they can get the student record every time.

FEEDBACK SYSTEM

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II. CONCLUSION

A methodological approach of a framework that is necessary which combines the two frameworks in one platform that is by identifying the face of the student attendance details along with his marks grades and progress must come together in one form by aligning these two methodologies together this is the proposal of this paper the framework modes and methods can be described elaborately in the forth coming papers.

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