

Smart Student Intelligent System



P. Pavan Kumar, D. Madhusudhana Rao, S. Chinna Gopi, Gokul Yenduri

Abstract: In the era fast growing technology it is necessary for all the educationist to keep more focus on the students because they are the backbones of our nation. In this regard even though there are many systems that make the notation and analysis of students as the one that contribute to the student. This paper presents a consequent approach to measure the problem solving skills which imparts few of life skills, technical skills and intelligent skills which are basically needed in this generation to seek jobs. There must be a system to calculate the intellectual abilities of a student because intellectuality shows a rapid transformation on the evolution of mind sets of students. This paper represents an elaborative approach to estimate the levels of students and categorize them based on their mind sets. It is necessary for all the students in order to acquire a skill set and in order to sustain the skill their intellectuality matters.

Keywords: contribute, impart, technology, smart study.

I. INTRODUCTION

The most important element in the development of Country is the education. In this regard we being the future educationists need to have an ideology towards the development of the country and make it a progressive one. In this regard an ideology to increase and encourage the student skill rather than performance is made as a criteria to accomplish the tasks. To encourage such sort of students with the predicative applications of machine learning is necessary in order to accomplish the task of the student and to drive them towards their own pathway or gateway.

This paper ensembles an innovative approach to drive the student vision into a mission by their performance gain in attaining a skillset particularly with the model base and accomplishment gap that occurs in teaching and learning.

Student at most of this generation are gaining a retention towards the education. They will give a deaf year to the teachers and won't understand the logical subject that is taught by the teachers because of several reasons mentioned as follows:

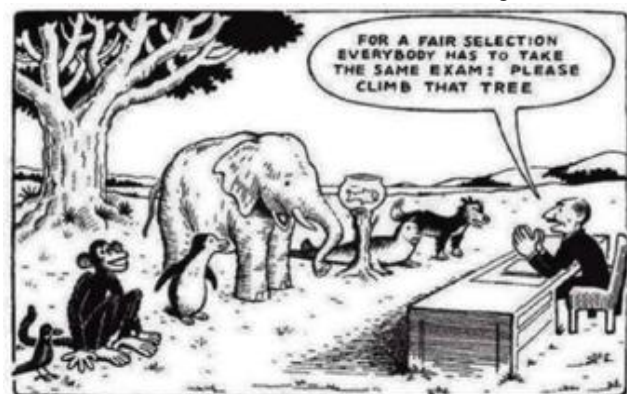
1. Class is not an interesting element to them.
2. They may not have patience in sitting and listening to class.
3. Hero worship.
4. Inference on gossips.
5. Attraction towards the opposite sex.
6. Take it easy policy
7. Lineant behavior

The above mentioned are the various barriers for making the teaching in the classroom as teaching is an important module that changes and decides all the other professions in the society it is necessary for all the educational institutions to overcome these barriers.

Now a days as technological domain is increased rapidly everyone is willing to have a change of strategical learning in the classroom. This is possible only with the help of Artificial Intelligence when it is coupled with E Learning approach.

In order to make the students overcome all these barriers and concentrate on their career-based system rewards play a major role. A reward is given to the student only if he or she satisfies all the criteria in that particular system and these rewards can be changed according to the choices of students in that particular class because all the five fingers cannot be equivalent at all the time every finger has their own functionality. Likewise, every student has their own skillset and depending on their skills they can acquaint and take the rewards.

The following figure illustrates the tests in INDIAN EDUCATIONAL SYSTEM is mentioned in figure 1



Our Education System

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

- Albert Einstein

Figure 1: INDIAN EDUCATIONAL SYSTEM TESTS

Manuscript published on November 30, 2019.

* Correspondence Author

P. Pavan Kumar*, Assistant Professor, Department of CSE, Department of IT, VLITS, VFSTR, Vadlamudi .

D. Madhusudhana Rao, Assistant Professor, Department of CSE, Department of IT, VLITS, VFSTR, Vadlamudi .

S. Chinna Gopi, Assistant Professor, Department of CSE, Department of IT, VLITS, VFSTR, Vadlamudi .

Gokul Yenduri, Research Scholar, Department of CSE, Department of IT, VLITS, VFSTR, Vadlamudi .

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From the above figure it is very clear how educational system in INDIA is been working on the progressive development of individuals. In order to evaluate such kind of system it is necessary to identify the talent of individuals and award them accordingly. This is done in this paper[5].

II. LITERATURE REVIEW

The study conducted by Kotsiantis et al [1] is one of the initial studies which investigated application of machine learning techniques in distance learning for dropout prediction. The most significant contribution by this study was that it was a pioneer and carved the path for several such studies. While machine learning algorithms had been previously implemented in several settings, this was perhaps the first time that these techniques were applied to an academic environment[2]. Following Data mining algorithms applied for the results.

This evaluation priority is not sufficient to give the rewards to the student performance so now it is the requirement of the progression of students in giving the reward to the students. The evaluation priorities can be captured as follows with the collaboration of all the faculty members by using the below google forms as follows

Fig 1: Google form for students info

Fig 2: Google form for students info

III. METHODOLOGY

The thing before the procedure of producing the esteemed results starts with the analytical approach of finding the facts starting from the data set to finding the algorithms and applying them according to the needs and necessities of the students in evaluating all their skillsets which comprises of

their passions their interests their hobbies and their intellectual ability along with the communication skillset is taken as a database. Then the application analysis of the algorithms on these datasets must be specified with the preprocessing step. The following is the methodological analysis for the above application

1. Creating a dataset

The primary thing in the design issues of the development of this is collecting the data with certain attributes depending on the understanding level of student.

For example, a student may not study well in the class but his performance in singing is good. A student may not draw good diagrams in the class but he might be a good artist.

The reward must be given to the student on analysis of his mind set in the vision of empathy of students

2. Preprocessing of Data

The dataset thus collected via the requirement analysis must be preprocessed by using the Jupiter in ANACONDA

3. Designing the Confusion matrix

The next step is the design of the correlation matrix by combining all the elements of rows and columns that are given as attributes.

The following are the attributes that are considered for the design of this Project.

Student current status

Parental Background

Behavior in the classroom

Interests

Hobbies

Passions

Aptitude Skills

Reasoning Skills

Creative Skills

Critical thinking skills

Intellectual skills

A matrix must be drawn on keeping all the elements in the mind and start executing the entire Project.

4. Application of Algorithms

It is essential for a teacher to identify all the elements of a student that deserve him in a suitable sustainable career for this purpose his intellectuality plays a major role.

The intellectual ability of the student in acquiring a sustainable career in future needs the entire classification of student mind analysis.

This is acquired by applying the machine learning algorithms like SVM, LINEAR MODEL and RANDOM FOREST..

4. Algorithms Used

i) Random Forest

ii) SVM

iii) Linear Model

i) Random Forest Algorithm

Classification: The widely used term in almost all the senses because in order to elaborate the knowledge and the skills it is necessary for every individual to understand and elaborate the basic theories of knowledge

Classification demonstrates a separation of clustered things that are grouped together

For example, a bunch of black color white color and red color pens are in the table and by using the classification joining of all black pens in one row and red pens in one row can be done.

Classification is a one method that classifies all the data from the couple of data. In this strategy classification is applied in order to categorize the entire intellectual student categories as

1. Good
2. Average
3. Needs improvement

This classification is done by using the random forest as true positive and false positive values.

Regression

Regression is the algorithm that is widely used for the broader range of values which are discrete in nature

ii) Linear Regression

Linear Regression is a machine learning algorithm based on supervised learning. It performs a regression task. Regression model are used to predict target value based on independent variables. It is mostly used for finding out the relationship between variables and forecasting. [2].

The main theme behind the implementation of this algorithm is that it is used to predict the forecast. When a critical problem is solved by the student it must be taken up to understand the intellectual ability of student and enrich in his field. This is done by using the Linear Regression.

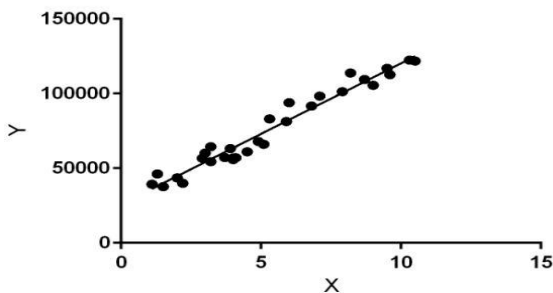


Fig 3: Linear Regression

ii) SVM

Support Vector Machine (SVM) is a supervised machine learning algorithm which is used for both classification and regression. Most of the SVM Machines are used for the purpose of classification. This algorithm plots each data item as a point in n dimensions along with the value of each feature being the value of a particular coordinate. After the data that is predicted by applying the random forest algorithm SVM which is used to classify and cluster the classified intellectual abilities and clustered intellectual abilities which are called as predictions of data elements these two are joined together using the SVM.

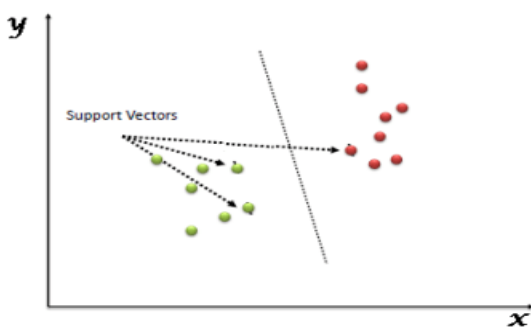


Fig 3 : SVM

5. Apply the suitable algorithm to find the best accurate results.

6. Verify the results and undo the process if there are any errors.

Thus, the following steps help in training the machine by generating the test data and training data and trying to correlate each of them using the above applied algorithms to cluster and classify the results according to the data set.

The major diagnosis problem over here in the data set is the attributes of which are to be considered as high potential attributes they might vary from student to student and predicting the accurate outcomes from all these attributes is the toughest job for any individual to reproduce the desired results

IV. RESULT AND DISCUSSION

Random Forest

The following are the results when Random Forest is applied

Accuracy -- > 74.02597402597402

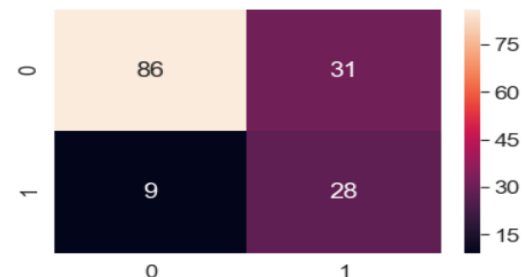


Fig 4 : Random forest results

This algorithm gives the accuracy of 74%

SVM RESULTS

Accuracy -- > 75.32467532467533

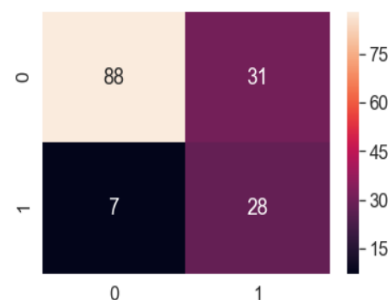


Fig 5: SVM Results

LINEAR REGRESSION

Accuracy -- > 76.62337662337663

C:\Users\RITHVIX\Anaconda3\lib\site-packages\sklearn\linear_model\logistic.py:432: FutureWarning: d to 'lbfgs' in 0.22. Specify a solver to silence this warning.
FutureWarning)

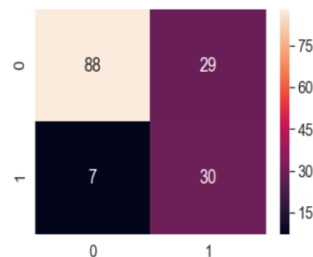


Fig 6: Linear regression results

The following results of their accuracy can be tabulated as follows:

Table 1: Results showing all the methods

S.NO	METHOD USED	ACCURACY
1	LINEAR LREGRESSION	76.62%
2	SVM	75.32%
3	RANDOM FOREST	74.02%

From the above table 1 it is clearly understood that none of the algorithms can predict the highest accuracy of 80%.

V. CONCLUSION

With the help of strategical evaluations that are mentioned in the Paper the upcoming enlargement can be combined with the idealistic evaluation of students following the 3I's mode

Imagination

Innovation

Implementation

While implementing the above model 4th I must be kept aside by the teachers as well as students in order to have the desired outcomes. The 4th I is nothing but the Ignorance of the student due to some lapses in his behavior and the pattern must keep aside if there are certain enhancement to develop projects like these. The above presentations of the paper includes a startup Project to initiate and inculcate the measurement of the intellectual abilities of the students and giving them a reward automatically on the abilities that have been raised in them in order to grow up. There is a conclusion that can be drawn up from the above set of arguments to draw an analytical ability thinking ability of the students help in many students to identify their roles and settle in a sustainable profession.

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AUTHORS PROFILE



P. PAVAN KUMAR is working as ASSISTANT PROFESSOR IN VLITS from MAY 2019 to till date .His Achievements are Published paper "Network based traitor tracing technique using session key generation" in GJCAT. Published paper ""Privacy Preserving For Collaborative Data Distribution By Using

M-Privacy" in IJRCSE.

He also Participated in NS3training program conducted at VIGNAN UNIVERSITY. He Organized Engineering Fest "SRUJANA-09" at Guntur. He also Organized Sports Fest "Nypunya-10" as a "convener" at Ongole. He Participated in NS3 program at Vignan University. He Participated in Faculty Development Program conducted by JNTU Kakinada. He also Participated in BIG DATA workshop. He also Participated in AI and ML workshop in SRK Institute of Technology.



D.Madhusudhana Rao is working as ASSISTANT PROFESSOR in the department of I.T in VLITS VADLAMUDI .He Ian a compassion to be an Entrepreneurial self-starter and a strong communicator. Fast learner and innovator. Active and enthusiastic worker .He Can work as a team as well as individually Ability to deal with people diplomatically. Love to learn new things.



Chinna Gopi is Working as an Assistant. Professor of CSE Department in VFST has Worked as an Assistant. Professor of CSE Department in Vijaya Institute of Technology for Women, Vijayawada, from June 2013 to June 2019.



Gokul Yenduri received his Master's degree (MTech, IT) from VIT University. Currently, he is a Research Scholar at Vignan's Foundation for Science, Technology, and Research (Deemed to be University), Vadlamudi, India. His areas of interest are in software engineering, computer networks, network security, machine learning, and predictive analysis.