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# Career Guidance using Machine Learning

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***Abstract:*** ***Career guidance is nowadays become necessary because of its proper planning students are always in positive side and very less chances of failure in their respective field. If Career guidance is efficient then there will be excellent match between student skills and their end career goal for that many career counselling institutes using AI and ML with their domain experts for effective counselling.***

***Keywords: Artificial Intelligence, Deep Learning, Mindler, Hikewise, Human Intellifence, Bright Path, Classification, Regression, Naive Bayes, Logistics Regression, KNN, SVM***

## I. INTRODUCTION

Career Counselling application is used for deciding and choosing a career for those youth who are facing difficulties.
We are using machine learning with a supervised approach by studying past data of students who had excelled in their respective careers by working with their desirable job.
Proper student counselling will help them to pursued their desired goals
The challenges faced by students in choosing career are tackled with help of proper guidance and their should be scientific method and efficient technique to overcome their burdensome situations.

## II. LITERATURE SURVEY

There are many career guidance software available in the market with different way they are gathering information from their clients mostly their clients are student of all class and that student who seeking an opportunity to work abroad.
Counselling is carried out by industry specialists and successful entrepreneur and also some career guidance solution using Artificial Intelligence and Deep learning for making an interactive communication with their clients through attempting survey.
Some of the popular existing career counselling software are Mindler and Hikewise which are web- based application and both application gathering information by conducting survey.
Mindler is using advice from their career counsellor where as Hikewise is using Artificial Intelligence and expert advice.
Our system Bright Path withstand because our system is analysing area of interest of every individual student and ultimately this approach help student to prefer best career path without dependent on external counsellor.
Many such system are available and all those software are working good in their respective domain like that our software is also efficient way for guiding students by using Machine Learning technology.

| | Bright Path | Mindler | Hikewise |
|---|---|---|---|
| Domain | School Students | For All Students | For All Students |
| Cost | Free | Rs2400 – Rs9400 | Rs1400 – Rs2400 |
| Product Uniqueness | BrightPath is not rely on human for prediction | Mindler is preferable for student trying for foreign studies | Hikewise use hybrid approach by AI and Human Intelligence |

## III. METHODOLOGY

In overall development process initial steps is to creating dataset from different sources and splitting data into two set one set consist of test data and other set consist of training data.
Before the splitting of the data into two set pre-processing activities is carried on for accurate and effective output while predicting career guidance.
On the basis of training data, model is predicting the accurate result for student to choose there career by extracting different features from the dataset and generating final output.

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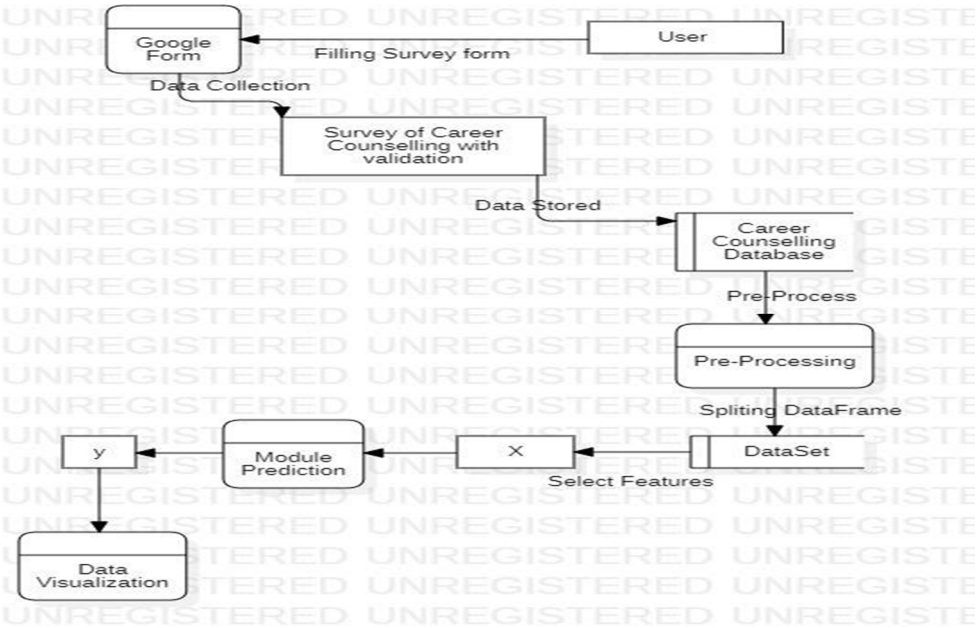


Figure 1.1

Figure 1.1 diagram show data flow of the system from the stage of data collection to the prediction and visualizing data to user

*A. Supervised Machine Learning*

Supervised Machine Learning is approach where the data is used to train machine for getting correct outcome.In this approach data is in labelled form so machine can learn effectively with labelled data.

Every data object is having own features and those features are significantly useful for getting end outcome with standard accuracy.

Accuracy is mean to measure effectiveness of algorithm on the data and this will help to analyze best fit algorithm or group of algorithms for learning and predicting end outcome.

*1) Labelled data:* In this Data consist is labelled and having set of pair with input data will lead to output data.

*2) Classification:* The output is predicted either true or false.

*3) Regression:* The goal is to predict continuous values.

Supervised machine learning is predicting target output value from the input features these previous input feature is used in the model in which similar features are used to predict the data.

| Index | English | Hindi | Marathi | Science | Algebra | Geometry | History | Geography | Art | EVS | SSC_PASS_CLASS | SC_SUBJEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 4 | 3 | 3 | 1 | 3 | 3 | 4 | 4 | 5 | 5 | Second Class | Arts |
| 1 | 5 | 1 | 1 | 3 | 3 | 5 | 3 | 1 | 2 | 1 | Second Class | Science |
| 2 | 2 | 3 | 4 | 4 | 4 | 4 | 1 | 1 | 2 | 3 | Second Class | Science |
| 3 | 1 | 5 | 5 | 4 | 3 | 5 | 1 | 3 | 2 | 3 | Second Class | Science |
| 4 | 5 | 3 | 5 | 2 | 3 | 5 | 2 | 1 | 1 | 1 | Distinction Class | Commerce |
| 5 | 4 | 5 | 3 | 1 | 3 | 3 | 4 | 3 | 5 | 2 | Third Class | Arts |
| 6 | 5 | 4 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 2 | Second Class | Arts |
| 7 | 3 | 4 | 3 | 1 | 3 | 3 | 3 | 5 | 4 | 5 | Distinction Class | Arts |
| 8 | 1 | 4 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 3 | First Class | Commerce |
| 9 | 3 | 3 | 4 | 2 | 4 | 3 | 3 | 5 | 5 | 5 | Third Class | Arts |

Figure 1.2

Figure 1.2 is dataset were we consider ranking out of 5 for subjects like English,Hindi,Marathi,Science,Algebra,Geometry,History,Geography,Art and EVS with their SSC ($10^{th}$ Standard) Passing Class and HSC Stream.

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With the help of Google Form this data are gathered and the above image consist of pre-processed cleaned data.

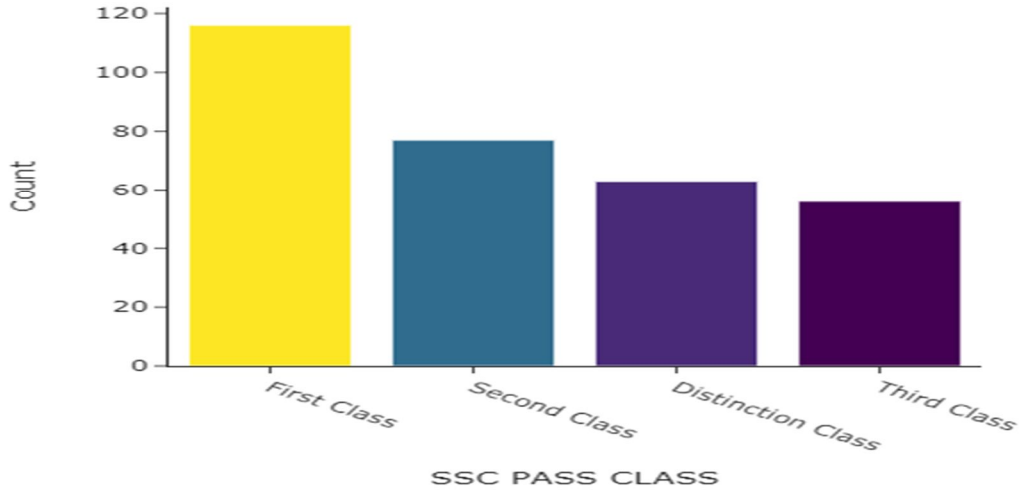


Figure 1.3

Figure 1.3 diagram shows total number of people are categorized in the above 4 classes.

- Distinction Class
- First Class
- Second Class
- Third Class

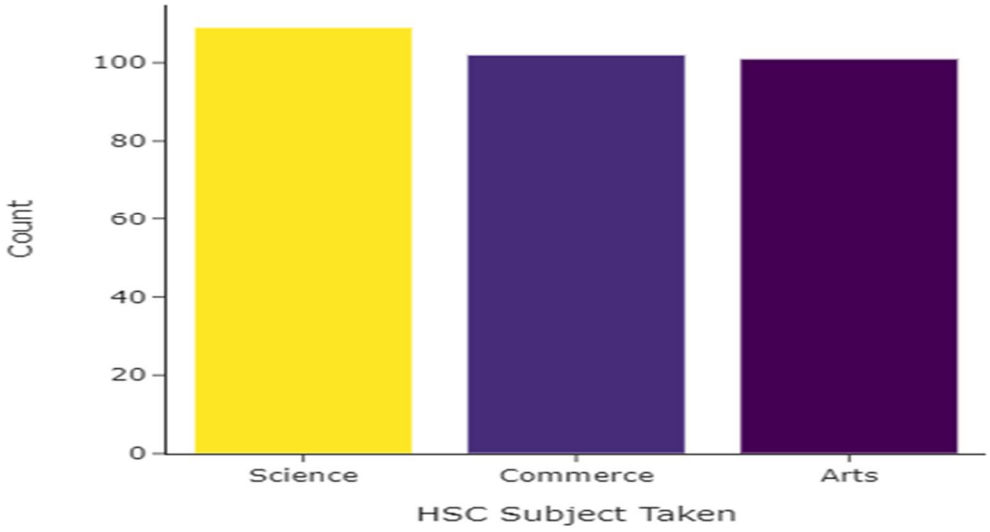


Figure 1.4

Figure 1.4 is representing data of people who responded to Google Form and their HSC (12th Class) Stream that they opted.

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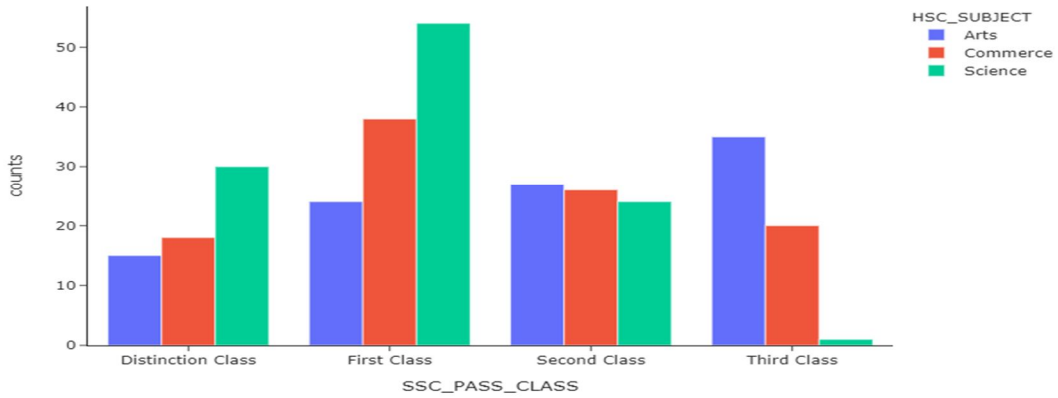


Figure 1.5

Figure 1.5 is is final data visualized using bar in this main two points are need to focus :

- In every SSC_Class people are opted for these three streams of HSC Class.
- By considering the interest of different subject stream are classified all model used in this research are playing significant role and every precision between interest of candidate and stream of HSC is accurate.

| ML Model | Accuracy |
|---|---|
| Naive Bayes | 0.8617 |
| Logistics Regression | 0.9365 |
| KNN | 0.868 |
| SVM | 0.901 |

Above table showing list of model implemented in this system with their respective accuracy after many successful training of machine.
Here every model is having distinct way for selecting features and module run according to their algorithm.

## IV. LIMITATION

This system is best for those student who need career counselling for HSC Class but for further academic areas are not covered in this system. This system is still under process
Whereas other two choice are good for foreign studies and higher education only student need to buy their subscription to access their complete service.

## V. CONCLUSION

Our research is on the system which we developed for student career counselling for students of $8^{th}$ Standard to $10^{th}$ Standard because at this age most of the student are facing serious issue while selecting right career path and other all systems available in the market is also primarily focusing on this three class i.e $8^{th}$,$9^{th}$ and $10^{th}$ so our initiative is to provide a free software for students and if they wish something more professional than they can go for Mindler or Hikewise because of their variety in product and wide networking for troubleshoot students problem regarding counselling.

## REFERENCES

[1] https://pandas.pydata.org/
[2] https://numpy.org/
[3] https://matplotlib.org/
[4] https://scikit-learn.org/
[5] https://towardsdatascience.com/

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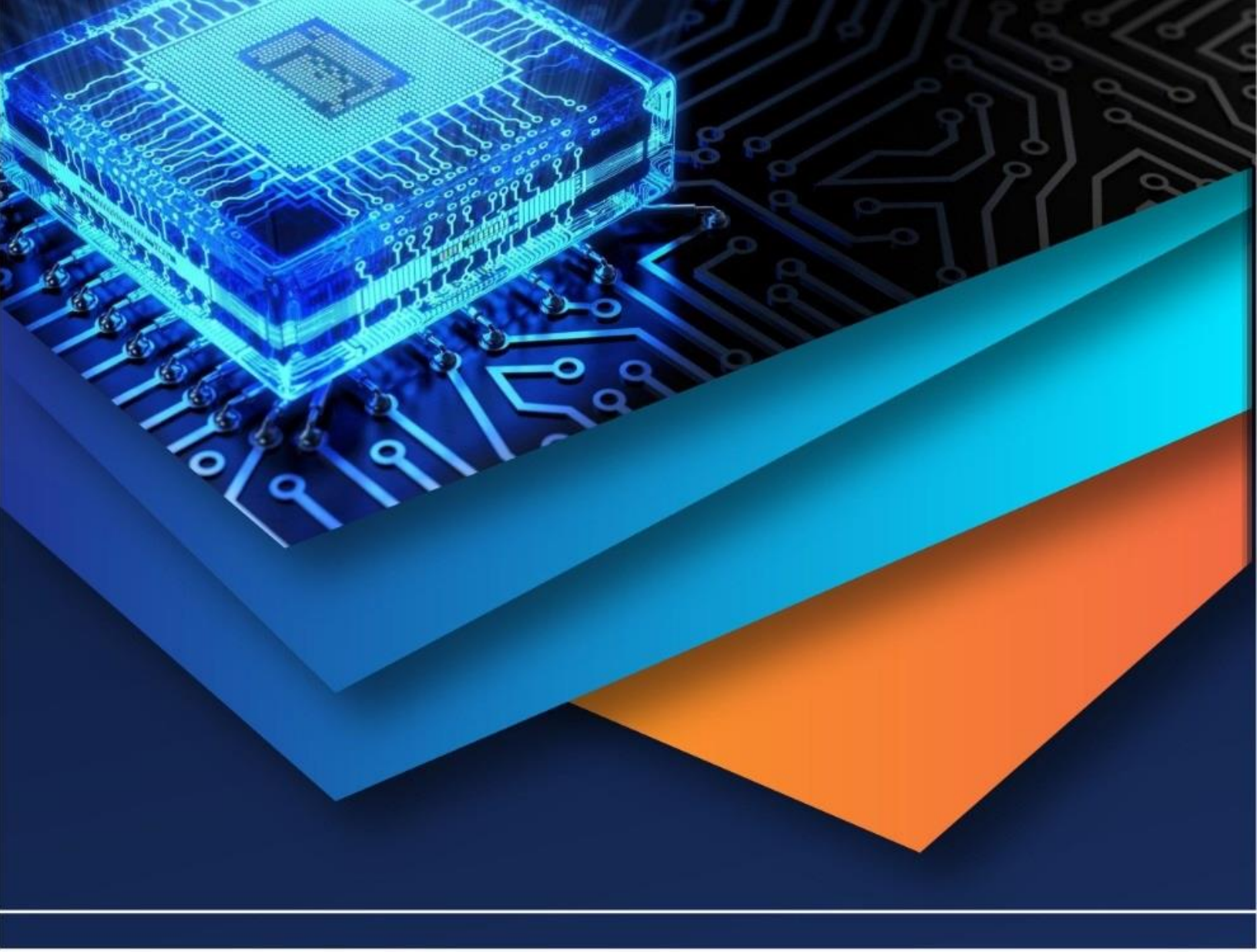

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