ANALYSING THE STRATEGY USING MACHINE LEARNING ALGORITHM

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Abstract : The main object is to find the strategy to win the current trend election by using Machine Learning Algorithm . Machine Learning is the study of computers algorithm that improves automatically through experience and by use of data. It is seen as a part of AI(Artificial Intelligence). Machine Learning Algorithm are the programs that adjust themselves to perform better as they are exposed to more data given by the user. There are many strategy used by various parties, using Machine Learning Algorithm is used to analyze the best strategy that can help the party to win the election.

***Key Words* - Machine Learning Algorithm, Strategy.**

I. INTRODUCTION

The main aim is to analyze Indian National Election. The main objective is to find the strategy to win the current trend election by using Analytical tool and predict which party wins the election. Python is used for analyzing and visualizing the data. The total Voting between different regions in India are taken to analyze the best strategy to win the current trend election. The data is collected and pre-processed by removing the duplicate votes and removing null values. Strategy Visualization is that visualizing the last 2 elections where winning party's strategy is visualized and compared. From the visualization we can predict the chance of winning party. Using the machine learning algorithm to find the best trendsetting strategy from the overall positive strategy that would help parties to win the current trend election.

Machine learning is science of getting computer to find out and act like humans ,improve their learning over time in autonomous fashion ,by feeding data and knowledge within the sort of observation and real world interaction, Machine Learning and Artificial Intelligence share the same definition

There are many strategy is used by various parties to win the election ,by using Machine learning algorithm we predict the best strategy to win the election. The algorithm that is used for analyzing the data are Logistic Regression, Polynomial Regression and Linear Regression.

II. Objective

Using machine learning algorithm to find trendsetting strategies from the overall positive strategies and would help parties to win the current trend elections.

III. Related Works

India has an electorate of quite 668 million and covers 543 parliamentary constituencies.Voting is that the bridge between the governed and government. The previous couple of years have brought a renewed specialise in to the technology utilized in the voting process. The current electoral system has many security holes, and it's difficult to prove even simple security properties about them. A electoral system which will be proven correct has many concerns. There are some reasons for a government to use electronic systems are to extend elections activities and to scale back the elections expenses. Still there's some scope of labor in electronic electoral system because there's no way of identification by the electronic electoral system whether the user is authentic or not and securing electronic voting machine from miscreants.[2]

Elections in India are conducted mostly using electronic voting machines that are developed over the past 20 years by the government-owned companies. These devices, known in India as EVMs, are praised for his or her simple design, simple use, and reliability, but recently they need also been criticized following widespread reports of election irregularities. Despite this criticism, many details of the machines; design have never been publicly disclosed, and they have not been subjected to a rigorous, independent security evaluation. [1]

AI and machine learning are often wont to engage voters in election campaigns and help them be more informed about important political issues happening within the country. Based on statistical techniques, the machine learning algorithms can automatically identify patterns in the dataset. By analyzing the web behaviour of voters which incorporates their data consumption patterns, relationships, and social media patterns, unique psychographic and behavioural user profiles might be created. Targeted advertising campaigns could then be sent to every voter supported their individual psychology. This helps in persuading voters to vote for the party that meets their expectations.[3]

IV. Methodology

A. Seaborn

Seaborn could also be a library for creating statistical graphics in Python. It builds upon the matplotlib and integrates closely with the pandas data structures. Seaborn helps you explore and understand your data. Its plotting functions operate dataframes and arrays containing whole datasets and internally perform the required semantic mapping and statistical aggregation to supply informative plots. Its dataset-oriented, declarative API allows you to specialize in what the varied elements of your plots mean, rather than on the tiny print of the thanks to draw them. Seaborn is used to visualize the given data in colorful

B. Logistic Regression

Logistic regression is one of the most popular Machine Learning algorithms, which comes under the Supervised Learning technique. it's used for predicting the precise variable employing a given set of independent variables. Logistic Regression is way almost just like the linear regression except that how they're used. rectilinear regression is employed for solving Regression problems, whereas Logistic regression is employed for solving the classification problems [5].

Logistic Regression is used to find the best trend setting strategy from the overall positive results . This helps the present party to win the election.

C. Polynomial Regression

In Machine learning there are many algorithms one of the algorithm is Polynomial Regression that models the relationship between a dependent variable(y) and independent variable (x) as n^{th} degree polynomial regression. It is also called the special case of multiple linear regression to convert into Polynomial regression. It is a Linear model with some modification in order to increase the accuracy.[6].

Step 1: Importing the libraries
Step 2: Importing the dataset
Step 3: Training dataset the Polynomial Regression model on the entire dataset
Step 4: Predicting the Results
Step 5: Comparing the important Values with Predicted Values
Step 6: Visualizing the Polynomial Regression results

Polynomial Regression is used to find the number of electors from 2009 to 2014 , whether the number of electors is increased or decreased

V. Implementation and Result

COUNT OF PARTY

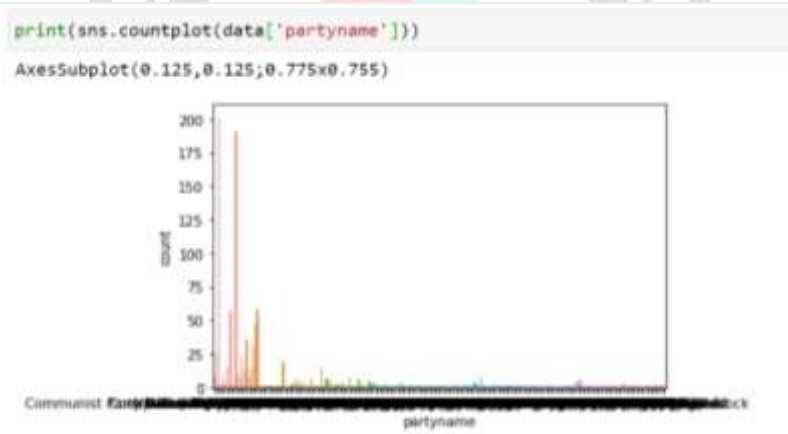

FIG. 1

The above fig shows seaborn plot of partyname. The plot shows the number of party participated in election 2009 and 2010

COUNT OF MALE AND FEMALE CANDIDATES

```
print(sns.countplot(data['cand_sex']))
```

```
AxesSubplot(0.125,0.125;0.775x0.755)
```

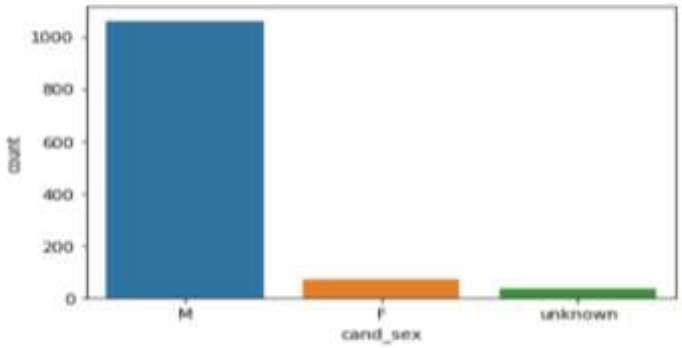

FIG. 2

The above fig is seaborn plot of Candidate sex, this shows the where the candidate is male or female. It shows male candidates are more than the female candidates.

ANALYSING THE STRATEGY USING LOGISTIC REGRESSION

PREDICTED VALUE 1

```
pd.DataFrame({'loss strategy':predicted_value_1,'winning strategy':test_Y1})
```

	loss strategy	winning strategy
237	free laptop	Monthly RS 1500 for household women's
742	free laptop	2GB Data for clg students
614	same ration card for all the states	Job to Youth 40%
734	free laptop	government jobs to families without anyone in ...
940	free laptop	Free Hospitalization
...	...	...
1158	free laptop	reinovating government hospitals
451	Transportational service in rural areas	government jobs to families without anyone in ...
603	same ration card for all the states	Cancel of education loan
773	free laptop	eradication of racisim
268	free laptop	2 GB data free for college student

817 rows × 2 columns

FIG 3

The above fig is the analysis of the predicted value by using Logistic Regression. It shows Loss Strategy and Winning Strategy of the party. It compares the loss strategy and winning strategy. From the comparison if loss party chooses the winning strategy they may win the election .Also the Winning strategy will be a key option for the present trend Election.

PREDICTED VALUE 2

The same procedure is done for the Predicted value 2

```
pd.DataFrame({'loss strategy':predicted_value_2,'winning strategy':test_Y1})
```

	loss strategy	winning strategy
237	Loan waiver to hotels	Monthly RS 1500 for household women's
742	Loan waiver to hotels	2GB Data for clg students
614	Loan waiver to hotels	Job to Youth 40%
734	Loan waiver to hotels	government jobs to families without anyone in ...
940	Loan waiver to hotels	Free Hospitalization
...	...	...
1158	Loan waiver to hotels	reinovating government hospitals
451	Loan waiver to hotels	government jobs to families without anyone in ...
603	Loan waiver to hotels	Cancel of education loan
773	Loan waiver to hotels	eradication of racisim
268	Loan waiver to hotels	2 GB data free for college student

817 rows × 2 columns

FIG 4

The above fig shows the analysis of by using Logistic Regression. It shows Loss Strategy and Winning Strategy of the party. It compares the loss strategy and winning strategy. From the comparison if loss party chooses the winning strategy they may win the election .Also the Winning strategy will be a key option for the present trend Election.

TO ANALYSE BEST TREND SETTING STRATEGY

```
pd.DataFrame({'partyname':predicted_value,'strategy`s':test_Z})
```

	partyname	strategy`s
485	BJP	Free Hospitalization
780	IND	free laptop
564	Independent	Government jobs to ladies
1148	IND	Free Education
583	IND	Increasing the public toilets facility
...	...	...
36	IND	job to youth
971	IND	green india
642	IND	Increasing the public toilets facility
860	IND	loans waiver to hotels
153	IND	improving infrastructure in harbour ports

817 rows × 2 columns

FIG 5

The above figure shows the winning party and their strategy .Thus the logistic regression helps to analyze the best strategy for the current trend election. This may help in future election.

INCREASE OR DECREASE OF ELECTORS USING POLYNOMIAL REGRESSION

```
plt.scatter(x,y,color='blue')
plt.plot(x,y_pred, color='red')
plt.xlabel("year")
plt.ylabel("electors")
plt.title("Plotting the electors")
```

```
Text(0.5, 1.0, 'Plotting the electors')
```

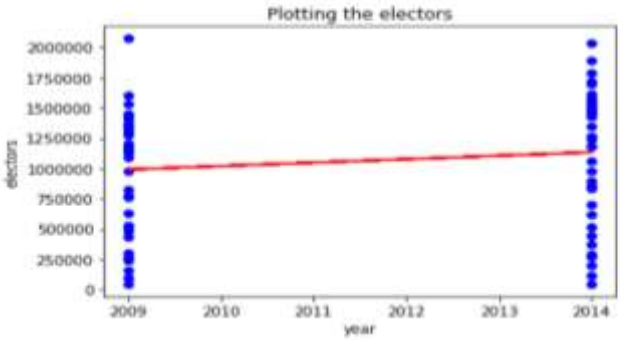

FIG 6

In above figure shows scatter plots of electors , we have given color, xlabel as year, ylabel as electors and title as "Plotting the electors" .It shows from 2009 to 2014 the number of electors increases. Polynomial Regression helps to find whether the number of electors increases or decrease. The population is increased from 2009 to 2014.

VI. CONCLUSION

In current developing society the need of people is increasing and the people below poverty are also increasing and the needs of people differs from one person to another person . Most of the family depends upon the schemes provided by the government. Though the strategy was analyzed from the past winning party's strategy ,it must also consider the current situation needs of the people , this will help the parties to win the Election.

FURTHER WORK

It is suggested that this method of solution can further extend by using different Machine Learning Algorithm or by Data Mining. This may give different results to solve the current situation problem.

REFRENCES

[1] Alex Halderman's .j Security Analysis of India's Electronic Voting Machines September 2010 DOI: 10.1145/1866307.1866309 SourceDBLP Conference: Proceedings of the 17th ACM Conference on Computer and Communications Security, CCS 2010, Chicago, Illinois, USA, October 4-8, 2010

[2] Sanjay Kumar et al. / International Journal on Computer Science and Engineering (IJCSE
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[3] https://www.mygreatlearning.com/blog/how-ai-and-machine-learning-can-win-elections/

[4] https://seaborn.pydata.org/introduction.html

[5] https://www.javatpoint.com/logistic-regression-in-machine-learning

[6] https://www.geeksforgeeks.org/python-implementation-of-polynomial-regression/