

Lead Scoring Case Study

Data Cleaning:

- The first step is to clean the data and remove unwanted variables.
- After removing we found that columns are having 'Select' as their labels and we need to replace those with the null values.
- Removed columns having more than 35% of null values.
- For remaining missing values, we have replaced with maximum number of occurrences of the column.
- We have some data with All Capital or All small values by replacing it with their correct format.

Data Transformation:

- Changed the multicategory labels into binary variables in the form of '0' and '1'.
- Created dummy variables for some variables.
- Checked the outliers and removed some of the numbers using 0.990.1% analysis.

Data Preparation:

- Splitting the dataset into train and test dataset.
- Scaled the dataset using the StandardScaler().
- Plotted heatmap for finding the correlations and dropping them.

Model Building:

- We build our model with the help of RFE with 19 variables.
- Checked the VIF Score for each variable, as all of the variables are having VIF Score < 5.0, we proceed to our next step.
- We then removed the insignificant variables using the P-Value Score.

- For our final model we checked the optimal probability cutoff by finding points and checking the accuracy, sensitivity and specificity.
- We found one convergent points and we chose that point for cutoff and predicted our final outcomes.
- We checked the precision and recall with accuracy, sensitivity and specificity for our final model and the tradeoffs.
- Prediction made now in test set and predicted value was recoded.
- We did model evaluation on the test set like checking the accuracy, recall/sensitivity to find how the model is.
- We found the score of accuracy and sensitivity from our final test model is in acceptable range.
- We have given lead score to the test dataset for indication that high lead score are hot leads and low lead score are not hot leads.

Conclusion:

Learning gathered below:

- ❖ Test set is having accuracy, recall/sensitivity in an acceptable range.
- ❖ In business terms, our model is having stability and accuracy with adaptive environment skills. Means it will adjust with the company's requirement changes made in coming future.
- ❖ Top features for good conversion rate:
 - 1. Last Notable Activity_Had a Phone Conversation
 - 2. Lead Origin_Lead Add Form
 - 3. What is your current occupation_Working Professional