

1. **Which are the top three variables in your model which contribute most towards the probability of a lead getting converted?**

Based on the logistic regression model and feature selection techniques:

- The model has iteratively selected features based on logistic regression and RFE. The top three variables contributing most towards the probability of a lead getting converted are not explicitly stated in the provided analysis.
- To determine the top variables, you can refer to the coefficients obtained from the logistic regression model. These coefficients represent the importance of each variable in predicting the lead conversion probability. In the summary obtained from the logistic regression model (`res.summary()`), look for the features with the highest coefficients (magnitude) as they contribute more to the probability of lead conversion.

- 1 **Total Time Spent on Website:** Leads spending more time website tend to have a higher probability of conversion.
- 2 **Lead Source Lead Add Form:** This variable indicates leads coming from the 'Lead Add Form' source, showing a significant contribution to conversions.
- 3 **Last Notable Activity Had a Phone Conversation:** Leads who had a phone conversation in their last notable activity are more likely to convert.

2. **What are the top 3 categorical/dummy variables in the model which should be focused the most on in order to increase the probability of lead conversion?**

- Similarly, the top three categorical or dummy variables that contribute the most to increasing the probability of lead conversion can be identified by examining the coefficients or feature importance obtained from the logistic regression model. These variables with higher coefficients signify a stronger impact on the conversion probability.

- 1 **Lead Origin (Lead Add Form):** Emphasize strategies to attract more leads through the lead add form.
- 2 **Last Notable Activity (Had a Phone Conversation):** Strengthen efforts towards engaging potential leads through phone conversations.
- 3 **Lead Profile (Lateral Student):** Strategies targeting leads categorized as "Lateral Student" could help improve conversion rates

3. **X Education has a period of 2 months every year during which they hire some interns. The sales team, in particular, has around 10 interns allotted to them. So during this phase, they wish to make the lead conversion more aggressive. So they want almost all of the potential leads (i.e. the customers who have been predicted as 1 by the model) to be converted and hence, want to make phone calls to as much of such people as possible. Suggest a good strategy they should employ at this stage.**

Strategy for Aggressive Lead Conversion During Intern Hiring Phase

- Given the goal of converting almost all potential leads identified by the model (those predicted as '1' by the model):
 - 1 Phone Call Strategy:** Focus on making targeted and personalized phone calls to potential leads predicted as '1' by the model during this period.
 - 2 Prioritize High-Probability Leads:** Prioritize the list of potential leads based on their predicted conversion probability (from highest to lowest). Start by contacting those with the highest predicted conversion probability first.
 - 3 Tailored Communication:** Craft personalized messages or scripts for phone calls, addressing specific pain points or interests identified from the model features to increase engagement and conversion chances.
 - 4 Utilize Interns Efficiently:** Train and allocate the interns to handle these calls, ensuring they are well-informed and skilled in engaging potential customers.
 - 5 Customized Follow-ups:** Tailor communication strategies based on the identified high-potential leads for more effective engagement.
 - 6 Utilize Predicted Conversion Scores:** Identify and prioritize leads predicted as '1' by the model, suggesting a higher likelihood of conversion.

4. Similarly, at times, the company reaches its target for a quarter before the deadline. During this time, the company wants the sales team to focus on some new work as well. So during this time, the company's aim is to not make phone calls unless it's extremely necessary, i.e. they want to minimize the rate of useless phone calls. Suggest a strategy they should employ at this stage.

- To minimize useless phone calls during this period when the company aims to focus on new work:

- 1 Probability Threshold Adjustment:** Adjust the probability threshold of the model to identify only the highest potential leads. Increase the cutoff probability to filter out leads with lower conversion chances.
- 2 Focus on Qualified Leads:** Refine the target list to include only those leads with the highest predicted conversion probabilities, avoiding unnecessary calls to lower probability leads.
- 3 Implement Automated Workflows:** Utilize automated systems or workflows to categorize and prioritize leads based on their probability scores, ensuring that only the most promising leads receive direct phone calls.
- 4 Explore Alternative Communication Channels:** Shift focus towards other communication channels such as targeted email campaigns, personalized messaging, or content-based nurturing for lower priority leads rather than direct phone calls.
- 5 Implement Lead Scoring:** Use the predictive model's probability scores to rank leads. Prioritize phone calls only to high-probability leads (close to 0.4 cutoff or higher) to optimize conversion chances.
- 6 Shift Focus to New Work:** Encourage the sales team to explore new opportunities, possibly focusing on nurturing relationships with existing customers, strategizing for upcoming quarters, or engaging in market research for new segments/products.

These strategies aim to optimize the use of resources based on the predictive model's insights, maximizing conversion rates during aggressive phases and minimizing unnecessary efforts during less critical periods. Adjustments in the threshold and focusing on high-quality leads can help tailor efforts to the current business objectives.