

Summary report

The objective of this analysis is to predict the probability of lead conversion for X Education, enabling the organization to improve conversion rates and optimize sales team efforts. The dataset included both numerical and categorical features, with key variables like *Total Visits*, *Total Time Spent on Website*, *Page Views Per Visit*, *Lead Origin*, *Last Activity*, and *Lead Source*. Data preprocessing involved handling missing values, encoding categorical variables, and ensuring data cleanliness. A logistic regression model was developed and fine-tuned using Recursive Feature Elimination (RFE), which accurately predicts the probability of lead conversion. The analysis revealed that *Total Time Spent on Website*, *Total Visits*, and *Page Views Per Visit* are the top numerical variables influencing lead conversion, while *Lead Origin*, *Last Activity*, and *Lead Source* are the most impactful categorical variables.

To make lead conversion more aggressive during the intern hiring phase, it is recommended to prioritize leads with a conversion probability above 0.7, focus on leads showing recent engagement (e.g., "Email Opened"), allocate interns to target productive lead sources like "Google" and "API," and use automated follow-ups to re-engage leads before calls. Conversely, when the company has achieved its quarterly targets, the focus should shift to minimizing unnecessary calls by raising the probability threshold to 0.9, filtering leads based on meaningful activities like "Form Submitted," prioritizing the highest-ranked leads using lead scores, and relying on automated communication methods (email/SMS) for lower-priority leads. Implementing these strategies, supported by the predictive model, will drive higher conversion rates, improve resource allocation, and optimize costs, ultimately enhancing the efficiency of the sales process. The model and strategies are scalable and can be applied to future campaigns, enabling X Education to streamline operations and achieve consistent business growth.