

# Lead Conversion Predictive Modelling

## Powering X Education's Sales Transformation

We successfully developed a logistic regression model that provides exceptional predictive power for identifying high-potential leads. The model achieved an overall accuracy of 96.69%, a ROC AUC score of 0.99, 97.3% sensitivity, and 96.21% specificity in the Test Set. These results indicate that the model can effectively distinguish between likely conversions and those with lower potential, offering actionable insights to optimize sales efforts.

### Key Predictors of Lead Conversion

The most notable numerical feature with the highest correlation to the target variable was:

- Total Time Spent on Website: This feature, along with others, indicates that higher engagement on the website directly correlates with a higher probability of conversion.

Among the categorical variables, we found that the Tags variable played a crucial role in improving the model's predictive power. The top three sub-categories within the Tags variable that have the most significant impact on lead conversion are:

- Tags\_Closed by Horizon
- Tags\_Lost to EINS
- Tags\_Will revert after reading the email

Focusing on these can help prioritize leads with a higher likelihood of conversion.

### Tailored Strategies for Peak and Off-Peak Periods

To support X Education's aggressive lead conversion targets, particularly during the intern hiring period, we recommended prioritizing leads with scores above 80, as these are more likely to convert. Additionally, we emphasized focusing on leads with high website engagement, as these individuals exhibit stronger intent. Empowering interns to leverage the predictive model allows for better-targeted outreach and a more efficient use of resources.

For periods when the company reaches its quarterly targets early, a different approach is required to avoid unnecessary contact and reduce the rate of ineffective phone calls. The strategy involves setting a high lead score threshold, e.g., contacting only leads with scores above 80. For leads with lower scores (below 30), we recommended automating communication and carefully evaluating the cost-benefit of each phone call. This reduces the risk of wasting resources on low-potential leads while maintaining strong engagement with high-priority ones.

## **Unlocking Insights and Actionable Recommendations**

Our comprehensive exploratory data analysis (EDA) revealed the pivotal role of website engagement metrics and appropriate assignment of Tags to leads in increasing the Model's predictive capability. We also provided actionable recommendations for X Education to optimize lead conversion efforts:

- **Predictive Insights:** Implement the model to assign lead scores and guide sales and marketing teams to focus on high-potential leads
- **Periodic Model Validation:** Continuously retrain the model to reflect evolving market conditions and customer behaviours
- **Optimize Campaign Strategies:** Direct marketing efforts toward segments or activities with high conversion probability
- **Monitor Key Metrics:** Regularly track sensitivity, specificity, and accuracy to ensure the model's ongoing performance

This predictive modelling project has equipped X Education with a powerful tool for optimizing lead conversion efforts. By combining robust model performance, actionable insights, and strategic recommendations, the company is well-positioned to achieve its ambitious 80% conversion target. Through continuous model refinement and strategic resource allocation, X Education can drive significant growth while maintaining high operational efficiency.