

Booking Prediction Model Summary

Model Used:

- Random Forest Classifier trained with SMOTE balancing

Evaluation Metrics (Test Set):

- Accuracy: 82.0%
- Precision (Booking = 1): 38%
- Recall (Booking = 1): 34%
- F1-score (Booking = 1): 36%

Cross-Validation Accuracy: 51.67%

Insights:

- SMOTE oversampling improves model's ability to detect bookings significantly.
- Balanced recall and F1-score make it more suitable than raw accuracy-driven models.
- Recommend further tuning or threshold adjustment to optimize business outcomes.

