

Analyzing Customer Booking Behaviour

1. Executive Summary & Model Performance

- **Goal:** To predict customer buying behaviour and identify the key factors that influence booking.
- **Model:** Random Forest ML model trained on **50,000** customer records as provided by British Airways.
- **Performance:** Achieved **85.24% Accuracy** on unseen test data, successfully identifying distinct booking patterns.

2. Key Factors that influence booking

- **Planning Time:** Inferred from **purchase_lead** at **19.5%**. The strongest predictor. Customers who search for flights in advance are significantly more likely to book than last minute searchers.
- **Route Demand:** Inferred from **route** at **14.5%**. Specific routes show consistently higher conversion rates, indicating strong regional demand differences.

3. Strategic Recommendations

- **Targeted Marketing:** Shift the target audience to potential customers for flights at least 2 months prior to the departure date than compared to last minute buyers.

