HMM01

From Listings to Bookings: Predicting Airbnb Occupancy with AI Precision

Nasim Binesh[1], Kushi Vardhan Reddy Pasham[1], Gidon Jakar[2], Ahmad Syah[2]

[1]University of Florida, Gainesville, FL, USA. [2]University of Florida, Gainesville, Florida, USA

Abstract

Accurately predicting Airbnb occupancy rates is crucial for hosts and property managers looking to maximize revenue. This study applies advanced machine learning models to predict occupancy rates using a comprehensive dataset containing 729,888 data points from 1852 distinct properties in Ann Arbor, Michigan. By examining key features such as property characteristics, amenities, and temporal factors, we assess the performance of models through metrics including RMSE, MAE, MSE, MAPE, and R^2. The results offer insights into the predictive power of these models and highlight the most effective approaches for improving occupancy rate predictions in the Airbnb marketplace.

Keywords: Airbnb, Occupancy Rate, Machine Learning, Predictive Analytics, Hospitality

Conference Track

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