

Advanced Recommender Framework for Personalized Airbnb Recommendations

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Problem Statement:

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I am a data scientist contracted by Airbnb to develop an innovative recommender framework tailored to the Airbnb platform. My goal is to provide users with personalized recommendations based on their specific preferences and priorities.

By incorporating user-defined indicators most important to them, such as 'quiet', 'friendly', or 'convenient', this model generates scores measuring their preferences with user-provided reviews and ultimately ranks Airbnb listings individually significant to them, enabling users to make informed decisions that align with their desired experience.

Imagine you're looking at renting a Airbnb. You go online to look at reviews but all you get is this one-size-fits-all score.

What if you could select terms most important to you, like 'quiet', 'clean', or 'comfortable' and get a personalized score that measures your priorities against those same reviews?

Start your search

Airbnb your home

21st-Century Granny Flat in Heart of East Austin

★ 4.84 · 763 reviews

Superhost · [Austin, Texas, United States](#)

Share
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Entire guesthouse hosted by Kristine

2 guests · 1 bedroom · 1 bed · 1 bath

Airbnb Plus
 Every Plus home is reviewed for quality. [Learn more](#)

Self check-in
 Check yourself in with the lockbox.

Kristine is a Superhost
 Superhosts are experienced, highly rated hosts who are committed to providing great stays for guests.

\$147

\$97

night

★ 4.84 · 763 reviews

CHECK-IN 7/28/2023	CHECKOUT 7/31/2023
GUESTS 1 guest	

CANCELLATION POLICIES

Non-refundable · \$396 total
 ☒

Refundable · \$433 total
 Free cancellation before Jul 23. Cancel before check-in on Jul 28 for a partial refund.
 ☐

Reserve

You won't be charged yet

[Show price details](#)

The space, recently built is naturally light, airy and open. It has a kingsize bed, 400 thread count sheets and lots of pillows. The sectional sofa was custom built to fit the space and the smart television can be watched comfortably from both it or the bed as it is mounted to the wall and swivels.

The bathroom and shower are truly special. The enormous shower is tiled in the most

Framework

Our recommender framework utilizes advanced machine learning techniques to analyze Airbnb data and identify relevant indicators for users' preferences. The framework consists of the following key components:

1. User Input
2. Data Processing
3. Machine Learning
4. Scoring and Ranking
5. Personalized Recommendations

Airbnb

LISTING ID*	SCORE
6935687	88.5%
42333408	85.3%

Now let's use a model that allows us to include terms most important to us, like: 'downtown', 'comfortable', and 'quiet'

LISTING ID*	SCORE
6935687	100%
42333408	<1%

*unique ID for an individual property

Model Evaluation:

Metric	Score
Accuracy:	92.8%
Precision:	93.1%
Recall:	99.7%
F1 Score:	96.2%

Benefits & Impact

Personalized Experience: Users can enjoy personalized recommendations that align with their specific preferences and priorities, enhancing their overall Airbnb experience.

Time and Effort Savings: The framework saves users time and effort by automatically filtering and ranking listings based on their preferences, reducing the need for manual searching and evaluation.

Improved Decision-Making: With the provided scores and rankings, users gain valuable insights into how well each Airbnb listing matches their desired indicators, facilitating informed decision-making.

Enhanced User Satisfaction: By tailoring recommendations to individual preferences, our framework aims to enhance user satisfaction and increase the likelihood of a positive Airbnb experience.

**THANK
YOU!**

TRISTON CROSSLAND

DATA SCIENTIST
