

# Localebnb

An Airbnb Contextual Recommender

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# Motivation

**When booking a private residence,  
how do you find the perfect neighborhood?**

# Problem

AirBnB Search Page

Listings belong to Neighborhoods  
(many:1)

AirBnB Neighborhood Guide

Neighborhoods exhibit traits  
(many:many)

**No ability to explicitly search/filter directly by trait!**

# Hypothesis

We can use listing descriptions to tease out neighborhood traits & customize search.

**Customer:**  
**Increased Satisfaction**

**Business:**  
**Increased Revenue**



AirBnB Listing Page

# Methodology

## ETL

Scrape Listing Descriptions  
*(feature text)*

Scrape Neighborhood Traits  
*(target variables)*

Requests +  
Beautiful Soup  
Logo

Mong

## Prepping

Created Training 'documents'  
*(joined documents, aggregated text, cleaned text)*

NLTK Logo

## Modeling

Word2Vec /  
Doc2Vec

TFIDF & Naïve  
Bayes

TFIDF &  
Gradient Boosted  
Trees

Gensim Logo

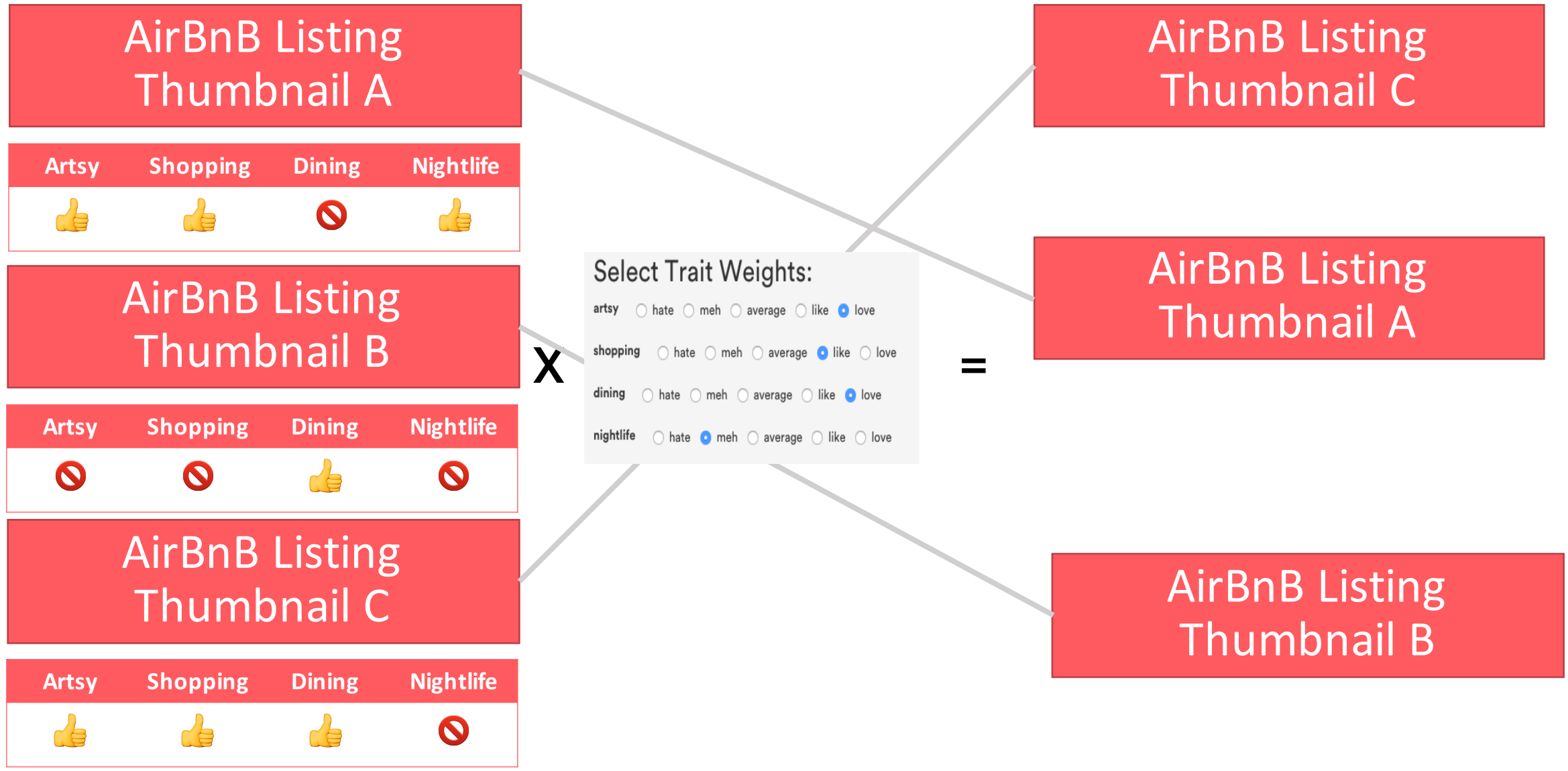
Scikit

## Re-Ranking

Implemented Custom Weighting & Scoring Function

Moz Logo

# Example





# Results / Outcomes / Extensions

- Trait Models Achieved 75-80% Accuracy
  - +15 pt lift over benchmark
- Business Outcome Modeling showed Revenue lift of xx% (?)



# **Thank You**

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