

# **Data Science** **Capstone Projects** **Proposal**

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# Proposal ONE

Customer Reviews Analysis  
Natural Language Processing  
(NLP)



# Source of Data

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Kaggle  
**“AirBnB Listings in California”**





<https://www.kaggle.com/datasets/setseries/airbnb-listings-in-california>





# Problem Statement

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Hotel or AirBnB business owners may **NOT** be getting **genuine feedbacks/positive reviews** from the customers verbally. Instead, they will go for online reviews

# Sentiment Analysis (NLP)

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Analyze reviews to **extract sentiments** and understand the satisfaction level of guests

# Audience

- AirBnb Businesses
  - e.g. Hotel Business
  - e.g. Property Owners
- Hotel Booking App Business



# Proposal TWO

Booking & Pricing Prediction  
Time Series



# Source of Data

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Kaggle  
**“AirBnB Listings in California”**







# Problem Statement

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Difficulty in determining the booking  
frequency and pricing strategy in  
different **seasons** and **occasions**



# Time Series Analysis

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Explore temporal patterns and seasonality in booking trends and prices. This can help in **understanding peak seasons, demand fluctuations, and pricing strategies** over time.

# Time Series Analysis

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# Audience

- Hospitality Business

  - e.g. Hotel

  - e.g. AirBnB

- Tourism Agencies

  - e.g. Tourism Board

  - e.g. Tour Agency Business

# Proposal THREE

Property Listings  
Categorization

Unsupervised Learning



# Source of Data

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Kaggle  
**“AirBnB Listings in California”**







# Problem Statement

No proper **categorization** of the property listings across different locations/areas



# Clustering Analysis (Unsupervised)

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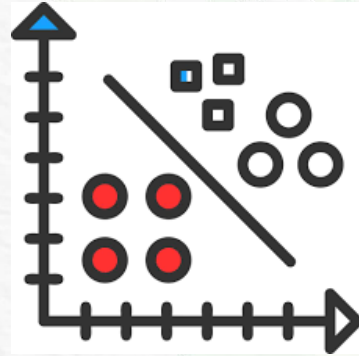
Group similar listings based on:

1. Location
2. Amenities
3. Pricing

# Clustering Analysis (Unsupervised)

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Using clustering algorithms like **k-means** or **Hierarchical Clustering**. This can help in identifying market segments and targeting specific customer groups.





# Audience

- Real Estate Agencies
- Property Owners