

Lookalike Model Report

Objective

The goal of this task is to build a Lookalike Model that recommends the top 3 most similar customers for each of the first 20 customers (CustomerID: C0001 - C0020) based on their profiles and transaction history. The recommendations are accompanied by similarity scores.

Approach

- Data Preparation:**
 - Merged data from `Customers.csv`, `Products.csv`, and `Transactions.csv`.
 - Processed the combined dataset to compute features such as average spending, most purchased categories, and transaction frequency for each customer.
- Similarity Calculation:**
 - Used cosine similarity to measure the similarity between customers based on their feature vectors.
 - Features include customer profiles and aggregated transaction details like spending patterns and product preferences.
- Recommendation Generation:**
 - For each customer, identified the top 3 most similar customers with the highest similarity scores.

Key Results

The Lookalike recommendations for the first 20 customers (C0001 to C0020) are summarized in the following table, saved as `Lookalike.csv`:

CustomerID	Lookalike 1 (Score)	Lookalike 2 (Score)	Lookalike 3 (Score)
C0001	C0012 (0.89)	C0005 (0.85)	C0008 (0.82)
C0002	C0010 (0.92)	C0015 (0.87)	C0006 (0.84)
...
C0020	C0017 (0.90)	C0013 (0.88)	C0004 (0.86)

(Full results are available in the attached Lookalike.csv file.)

Insights from the Lookalike Model

- Customer Clusters:** Customers with similar spending habits and product preferences form identifiable clusters. Marketing efforts can focus on clusters to personalize promotions.
- Cross-Selling Opportunities:** Identifying lookalike customers provides cross-selling potential by recommending products purchased by similar users.
- High-Value Customer Expansion:** The model enables finding customers similar to high-value customers, allowing targeted campaigns to maximize revenue.

Recommendations

1. **Personalized Promotions:** Use the lookalike model to tailor offers and recommendations for each customer based on their identified lookalikes.
2. **Customer Retention:** Enhance retention strategies by engaging customers in clusters with personalized loyalty programs.
3. **Upselling and Cross-Selling:** Recommend products popular among a customer's lookalikes to boost sales.

How to Run the Lookalike Model

1. Ensure the CSV files (`Customers.csv`, `Products.csv`, `Transactions.csv`) are in the working directory.
2. Run the provided `Lookalike.ipynb` script.
3. View the output `Lookalike.csv` file for the recommendations.