Santa All:

Grant a wish this holiday season!

Building an E-commerce Gift Recommender System based on User-Generated Wishlists

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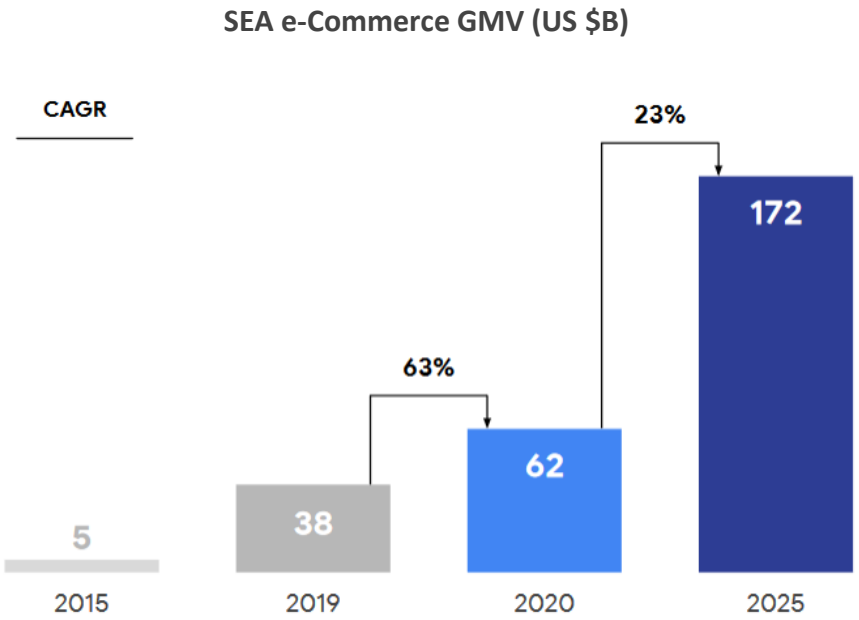
Background and Inspiration

Christmas is coming and people are expected to flock to e-commerce sites to buy gifts instead of doing the usual offline store shopping this holiday season.

The project aims to ease gift-giving by providing users a more efficient way of finding appropriate gifts.

Over a third of 2020's online commerce was generated by new shoppers,

of which 8 in 10 intend to continue buying online going forward.



Source: e-Conomy SEA 2020 by Google, Temasek, Bain & Company

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Our Feature: Wedding Registry-Like Wishlists

Create a wishlist

Make a public wishlist and fill it up with products you want to receive

Share with a friend

Share your wishlist link on social media or your favorite messenger

Get gifted!

Your friends can now see your wishlist and buy you gifts

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Recommender System

We want to help users build their wishlist and give their community appropriate gift recommendations.

Methodology

Tools

Python
Scraping, EDA, feature engineering, modeling

Django + mongoDB
Backend web framework and user wishlist storage

Streamlit + Heroku
Documentation and demonstration

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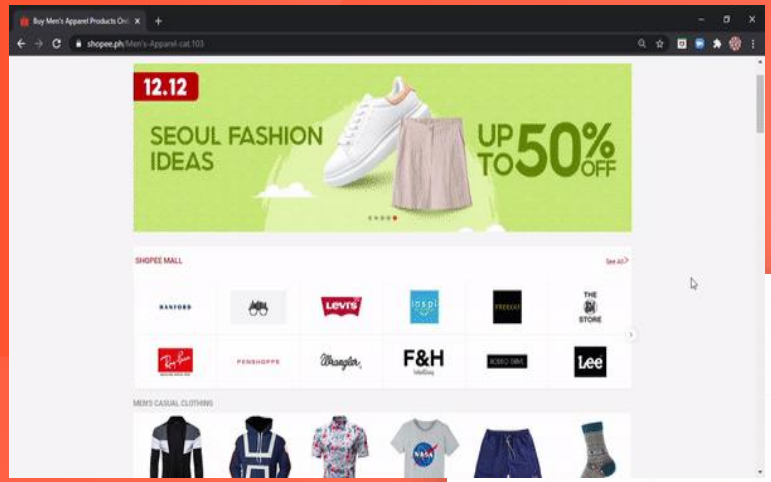
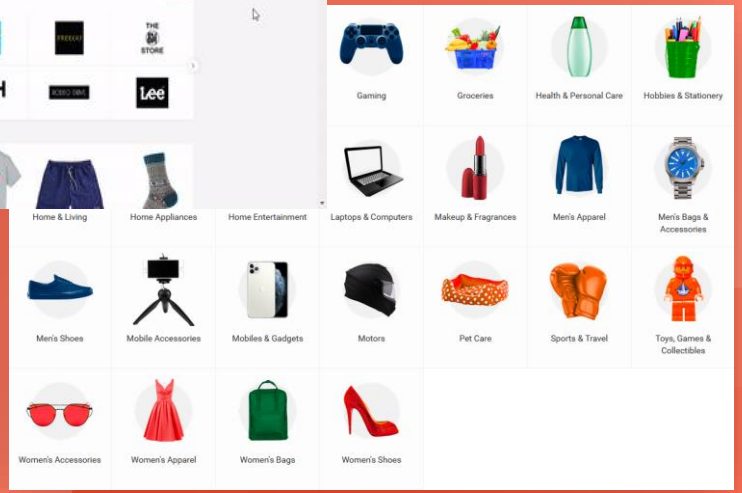
Dataset





41,943 products from
21 different categories

Features

1. Product Name
2. Categories (3 levels)

Scoring

1. Highly Rated (T/F)
2. Top Selling (T/F)
3. High Interest (T/F)
4. Discounted (T/F)
5. Trusted Seller (T/F)

Pipeline

1

Lemmatization

For word normalization and consistency

2

Term Frequency–Inverse Document Frequency (TF-IDF)

Term Importance and Distance

3

Network Theory

Filtering categories to recommend from

4

K Nearest Neighbors

Calculate product relevance

5

Scoring System

Filter most performing products

Demo

Evaluation

Click-Through Rate

To measure the relevance of content being served by the recommender system. (a.k.a. precision)

Avg Revenue per User

To measure the effectiveness of the recommender system at convincing customers buy more.

Revenue

We want our solution to improve overall revenue of the store.

Recommendations

Hybrid Filtering

To better recommend complementary items rather than substitute items.

3rd Party Website

Implement as a third party site that aggregates products from all e-commerce platforms.

Review Sentiment Analysis

To get product improvement ideas or a better understanding of consumer feedback.

Thank you!