APPAREL COLOR RECOMMENDER

NICK SUBIC

WHY DO WE NEED A RECOMMENDER?

- Online shopping increased 30% in 2020
- Difficult to navigate massive seller to seller markets
- Hard to shop by aesthetic
- Sellers use curated search words to dominate engines

Use cases

- Search using images from Social Media or Television
- Find vintage items without popular brand names
- Help sellers market unique items
- Improve host's brand sentiment

The Data

- Scraped 10,000 listings from grailed.com
- Shirts, sweaters and hoodies only
- Image data and summary info

pandas GRAILED Selenium

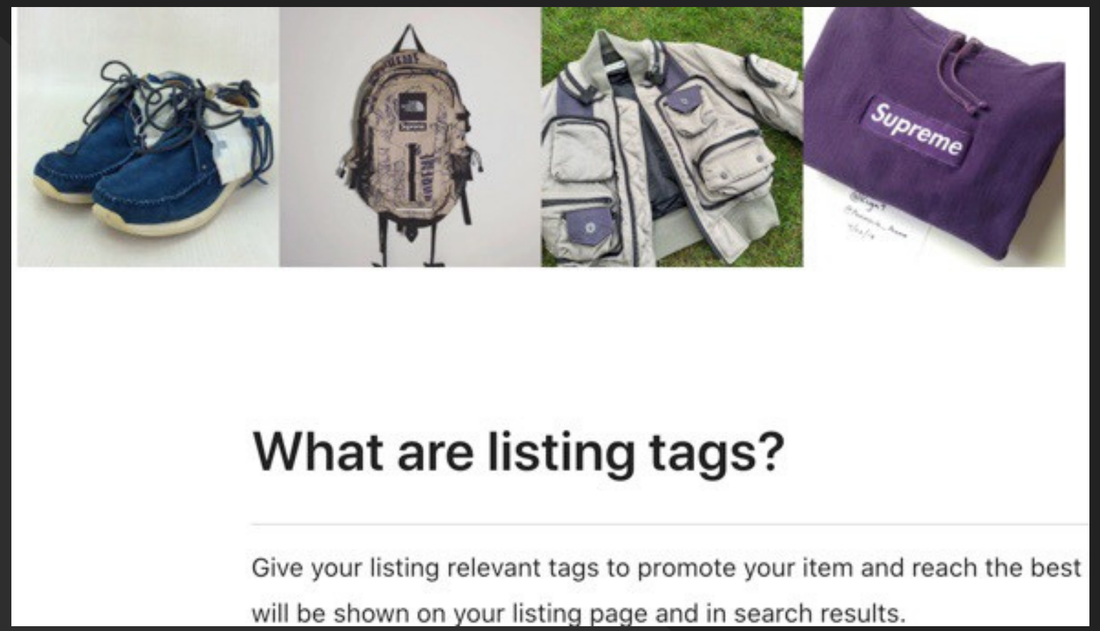
Image Processing

- Used ColorThief library to select palettes from images
- Pulls RGB data as a tuple
- Most images contained background noise

ColorThief

Removing Background Noise

- Used OpenCV to create a masking layer and remove backgrounds
- Sometimes crops image, but color data is not compromised



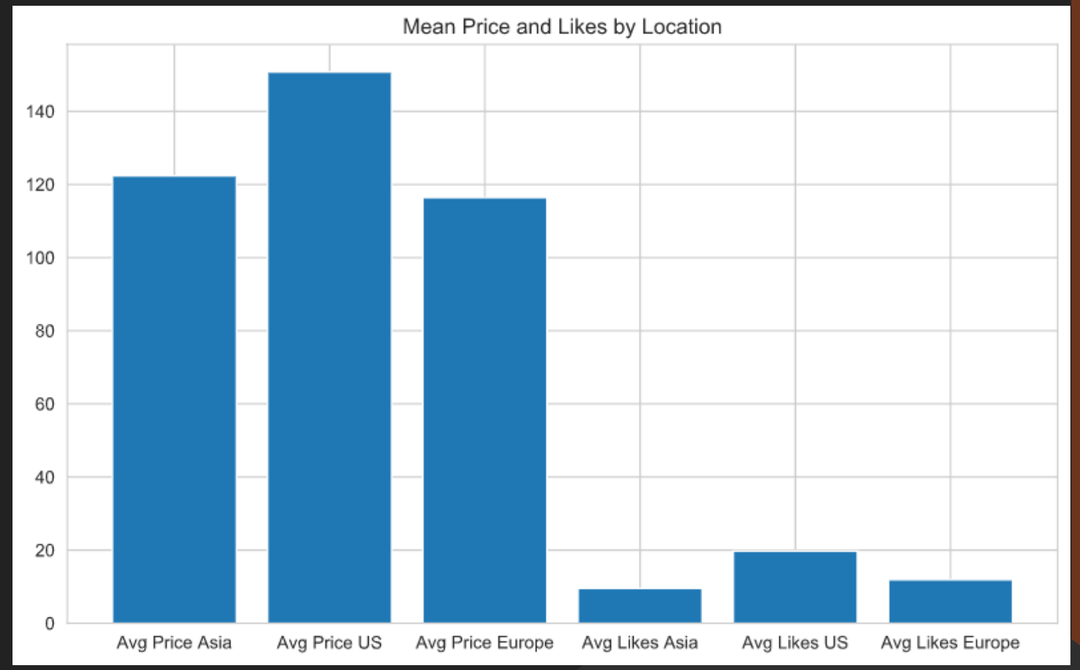
Finding Relevant Terms

- Generated 100 features using TF-IDF Vectorizer
- Binned Designer names into 20 relevant categories
- Separated seller by location

scikit learn

Evaluation metrics

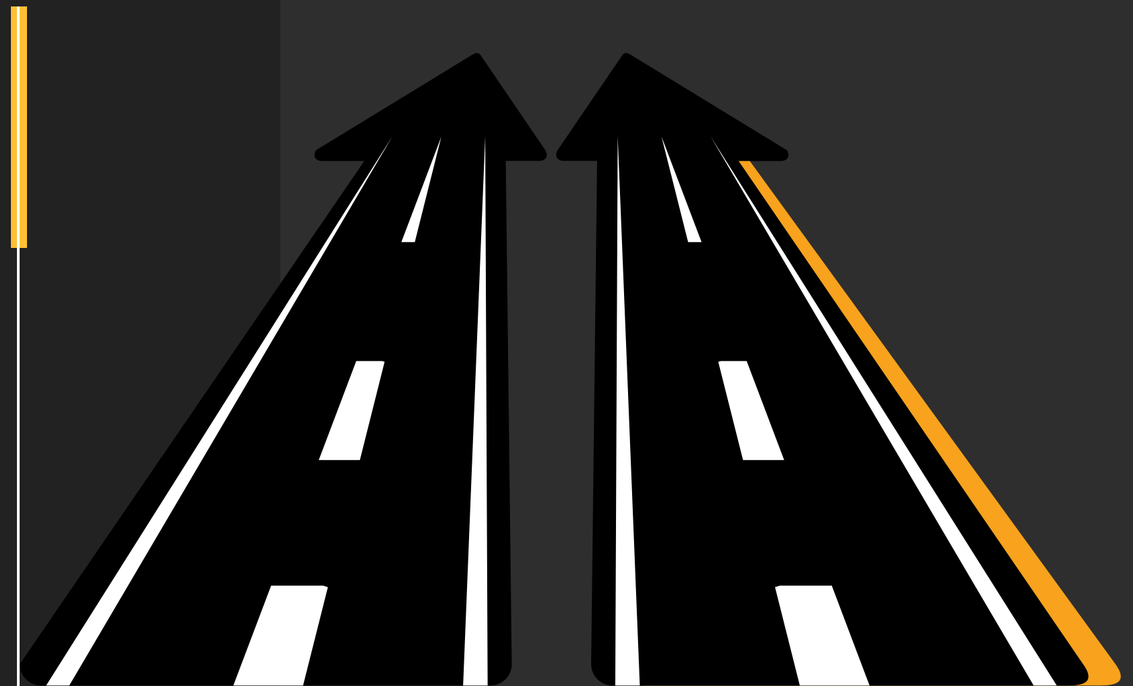
- Cosine Similarity
- Color Distance
- Standard Deviation of Likes
- Mean Difference in Price
- Visual Inspection



The models

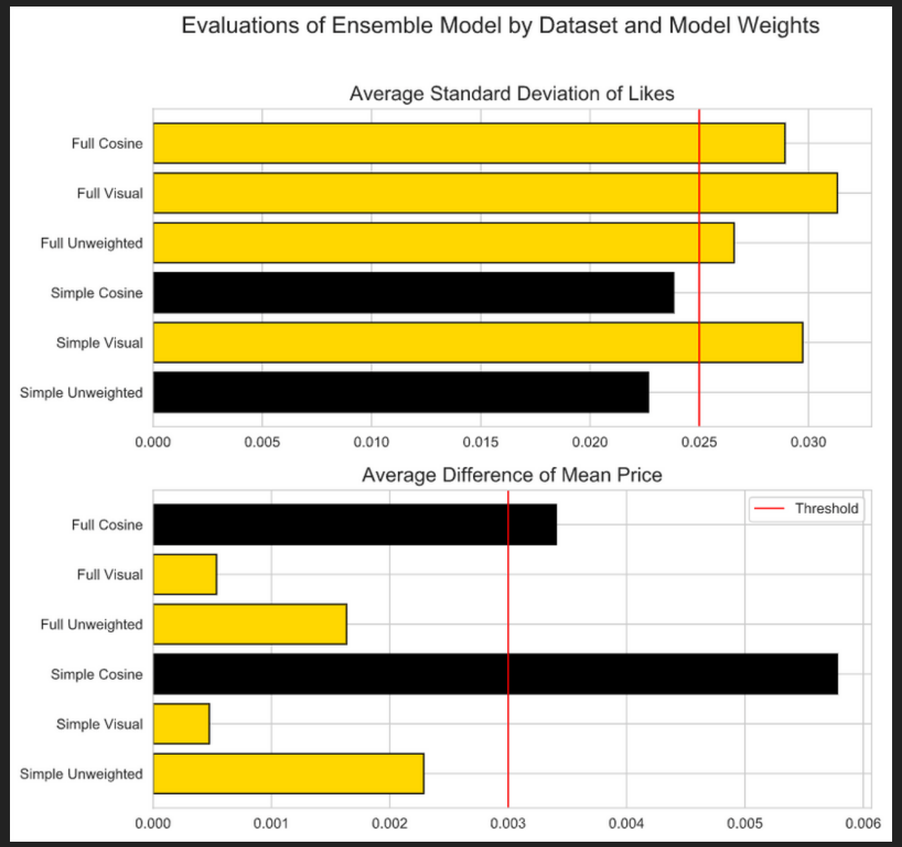
- Nearest Neighbors
- K Means Clustering
- Color Distance
- Cosine Similarity

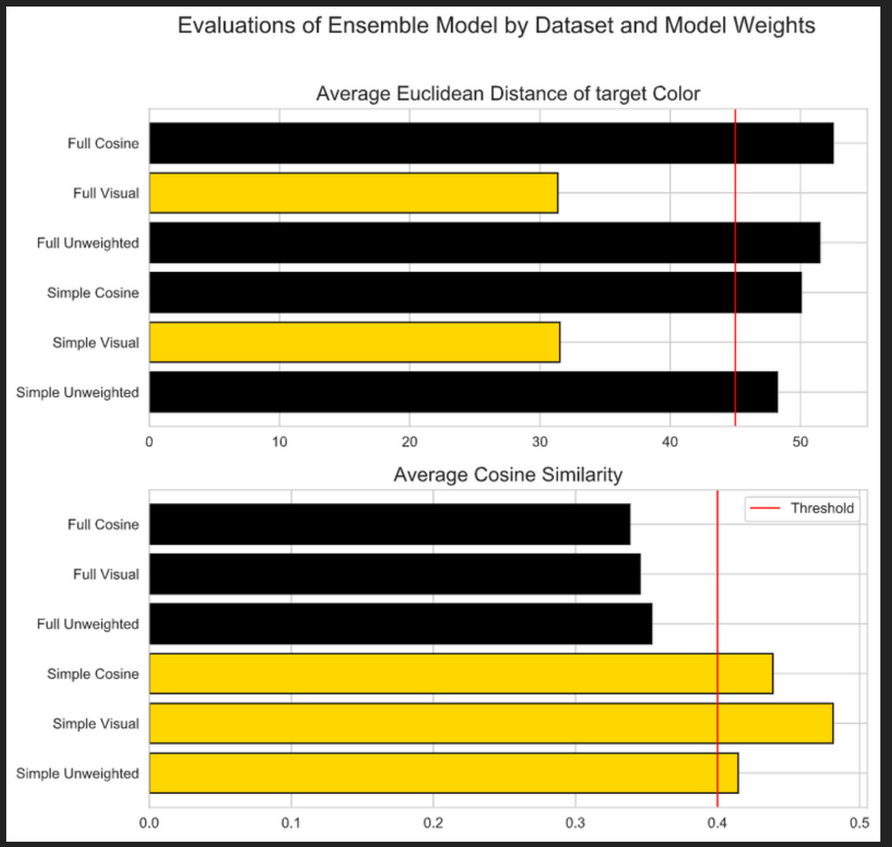
Ensemble model



- Split Data into searchable and backend subsets
- Created model weights for visual and cosine similarity
- Randomly instantiated model variations 100 times
- Evaluated Averages

Results





- Each iteration has pros and cons
- All hit some metrics
- Different data sets are better for different applications

The Next Steps

- Test with user input
- Create a GUI
- Expand data categories
- Classify images with a CNN

Contact

bagnine@gmail.com

Github Repository

github.com/bagnine/Clothing_Recommender

Acknowledgements:

Image background remover, Chris Albon

Scraping Grailed, Mike Liu

Evaluating Recommender Systems, Rakesh4Real