

THE NEXT DRINK'S ON THEM!

Recommend their next **favorite** bottle of
wine for customer happiness and
retention





THE PROBLEM

- Lack of customer **loyalty**
- Few **repeat** purchases
- Recommendation system **failing**

THE ROOT CAUSES



Collaborative recommender system

Niche preferences
are overlooked



Customers aren't usually experts

Hard to tell from just
a label if you'll like it



**“The best wine is the
wine you like.”**

—KEVIN ZRALY

THE SOLUTION



Content-based recommender system

Customers have unique preferences



Beginners welcome

Customers don't have to know **why** they like a bottle



Concrete features

Varietal, flavors, dryness/sweetness, body



THE IMPACT

Customers love their wines!

Expert suggestions
build trust

Repeat bottle purchases

Customer retention



Repeat purchases
per customer



Customers making
repeat purchases



Purchases per customer

WHAT'S IN A WINE?

- **Varietal** isn't everything
- Analysis performed on Kaggle dataset of 129,000+ expert **wine reviews**



A close-up photograph of numerous small, round, yellow candies. Each candy is individually wrapped in a clear, crinkled plastic wrapper. The candies are scattered across a light-colored wooden surface with a visible grain. The lighting is bright, highlighting the translucent yellow color of the candies and the texture of the wrappers and wood.

"**Tonic** and **lean** with a nearly **transparent** color and **lively perlage**, this non-DOC Prosecco offers **candy**-like aromas of **butterscotch** and **lemon soda**. There's an interesting touch of crushed **white peppercorn** in there as well and this well-priced wine would make a perfect match to **appetizers** and **finger foods**."



THE TOOLS



spaCy

- Grab nouns & adjectives
- Standardize & lemmatize



THE TOOLS

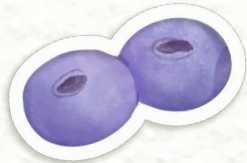


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Vectorizer

- Control word frequency
- Remove useless words



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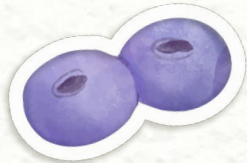
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PCA

Collapse to what's most important



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KMeans

130 clusters based on description and varietal



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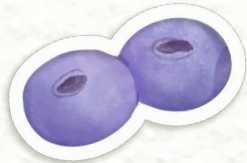
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Return recommended wines given 'liked' wines



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stylecloud

Understand the wines in a given cluster

MOCHA OAK SPICE COCONUT SPICE
SAGE RICH CHOCOLATE
TANNIN
BLACK CHERRY
TANNIN ASTRINGENT
OAK ASTRINGENT TANNIN
ESPRESSO LICORICE
ROASTED COFFEE
HERB
RIPE **TOAST** CHERRY
WHIFF PLUM **VANILLA** FIRM MENTHOL
COFFEE BEAN

CLUSTER 11:
COFFEE-LIKE
NEBBIOLOS



ACIDIC JUICE
SMOKE
CONCENTRATED
FRUITY
TEXTURE
TANNIN
DRY
DENSE
BLACK
DARK
RED BERRY
RICH
SPICE
GENEROUS
RIPE
SOFT
FRESH
FIRM
WOOD
AGE
RED
STRUCTURE

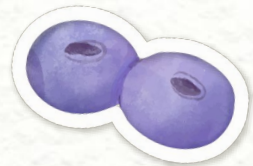


CLUSTER 63:
RICH PINOT
NOIRS

SPICE WHITE
MATURE **ACIDIC**
TOAST FRUITY
TEXTURE **BALANCE**
SOFT **RICH** LIGHT
AGE
RED **RIPE** FRESH
COMPLEX
READY BLEND
CRISP
SWEET
CITRUS
DRY
FINE
APPLE
CHAMPAGNE

CLUSTER 106:
ACIDIC CHAMPAGNE
BLENDS





THE MODEL

At least one 'like'

Most common 'liked' cluster

Most recent 'liked' cluster

1-3 random recommendations
from chosen cluster

"Fine acidity and a bracing **minerality**, like a lick of cold **steel** on a winter day, mark this Chardonnay. It has oak notes, but they're wisely kept in the background, allowing the citrus, **green** apple and peach flavors to star. This beautiful wine continues the winery's string of great reserve Chardonnays, and is their best since the 2006 vintage."

LIKED



"An initially wood-laden wine that only slowly reveals the rich fruit character. There is wood certainly, but the spice integrates well with the **green** fruits and the intense **minerality**. The great **steely** backbone on this wine indicates it will age."

RECOMMENDED



NUMBERS TO TWEAK

130

Total clusters

3

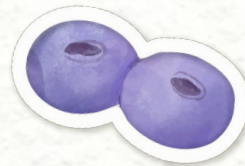
Recs per email

1

Cluster per email



FOR BEST RESULTS...



Data

Good, reliable descriptions

Experiment

A/B test recommender logic - i.e. wines from different clusters in same email

Focus groups

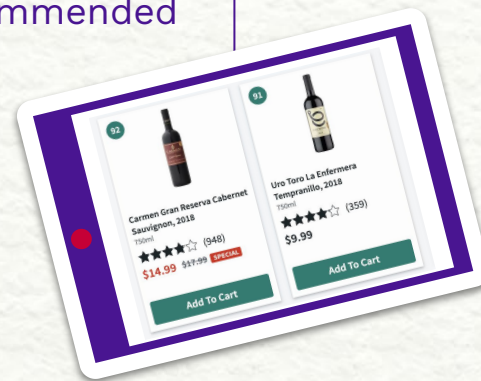
Test out model recommendations in person

Inform

Tell users why the wine is recommended

Encourage sign-ups

In-store iPads to recommend wines





Filter recommendations by price!

