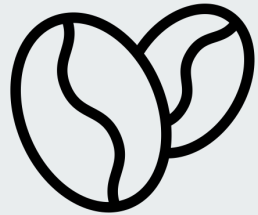




Coffee Recommender

Tofer Kim



“64% percent of Americans age 18 or over said they had a cup of coffee the previous day in 2018.”¹

“48% of millennials [said] they had a cup of coffee they consider to be gourmet the day before”¹

“If I like this coffee, which others might I like?”

- There are many different types of coffee with just as many flavor profiles and characteristics depending on factors such as:
 - Growing region, roast level, brewing method, etc.
- Compare coffees based on their features, ratings, and descriptions to provide a list of similar coffees.
 - Item-based recommender system





Web scraped 5,118 unique observations

www.coffeereview.com



95

Temple Coffee and Tea

Kenya Ruthaka Peaberry

Location: **Sacramento, California**

Origin: **Nyeri growing region, south-central Kenya**

Roast: **Medium**

Est. Price: **\$19.00/12 ounces**

Review Date: **January 2019**

Agtron: **48/72**

Aroma: **9**

Acidity/Structure: **9**

Body: **9**

Flavor: **10**

Aftertaste: **8**

Blind Assessment: Deeply sweet, richly savory. Dark chocolate, pistachio, red currant jam, honeysuckle, a hint of marjoram in aroma and cup. Balanced, sweetly savory structure with elegant, lilting acidity; lush, syrupy mouthfeel. The resonant finish consolidates to notes of dark chocolate and red currant, with undertones of crisp marjoram.

Notes: Despite challenges ranging from contested government coffee policy and urban encroachment on prime coffee lands to chronically unstable weather, Kenya continues to produce some of the world's most elegant and distinctive coffees. This particular sample consists entirely of peaberries, a kind of bean that results when the coffee fruit develops only a single, oval bean rather than the usual pair of flat-sided beans. Peaberries produce a somewhat different (often better) cup than normal beans from the same crop, from which they may or may not be separated during grading. Temple Coffee is a quality-focused retail and wholesale specialty roaster active in Sacramento, California since 2005. Committed to sourcing, roasting and brewing the finest coffees, Temple features coffee from distinguished single estates and cooperatives around the world. Visit www.templecoffee.com or call 916-454-1282 for more information.

The Bottom Line: A high-toned, nuanced Kenya cup, classic in its presentation of sweet-tart currant and deep chocolate notes.

[Show all reviews for this roaster](#)

[Visit Temple Coffee and Tea >](#)



Features to Consider

ID Features

- Coffee name, roaster, web-page slug

Categorical

- Region
- Type
 - Espresso, blend, organic, etc.
- Roast
 - Light — Very Dark

Numerical

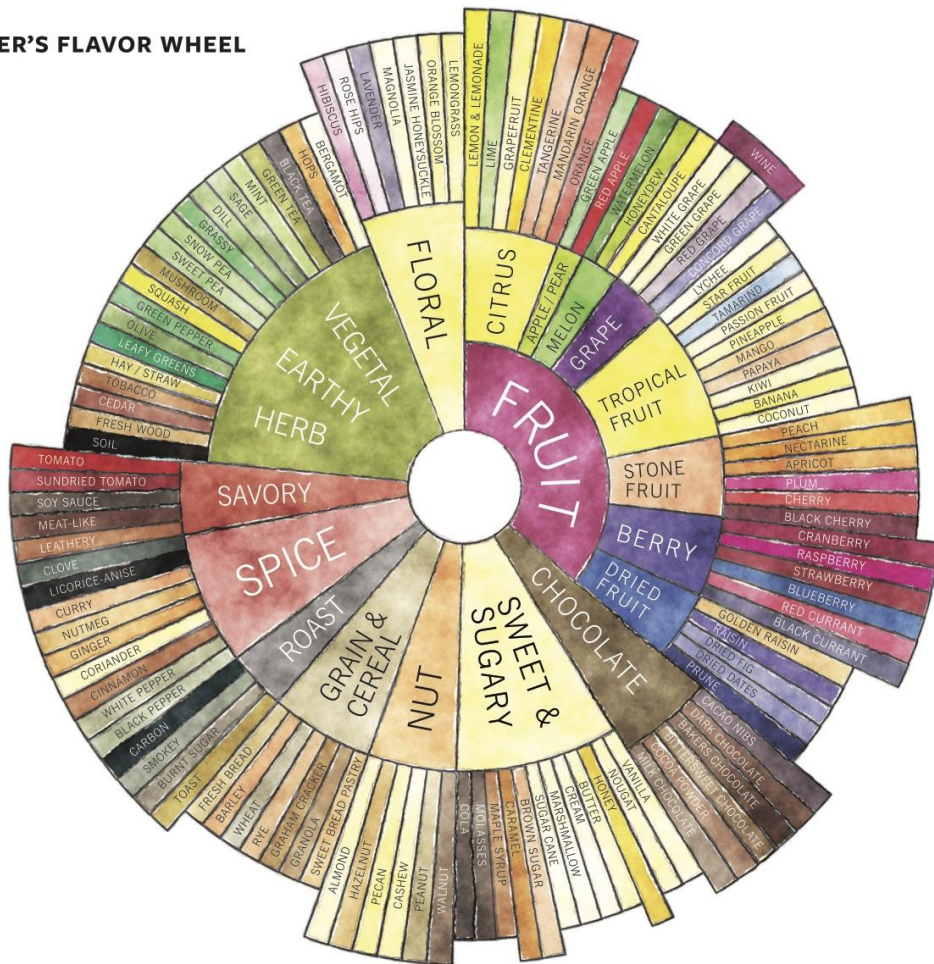
- Rating from 1-10
 - Aroma, acidity, body, and flavor
 - With milk, aftertaste
- Overall rating 1-100

Text

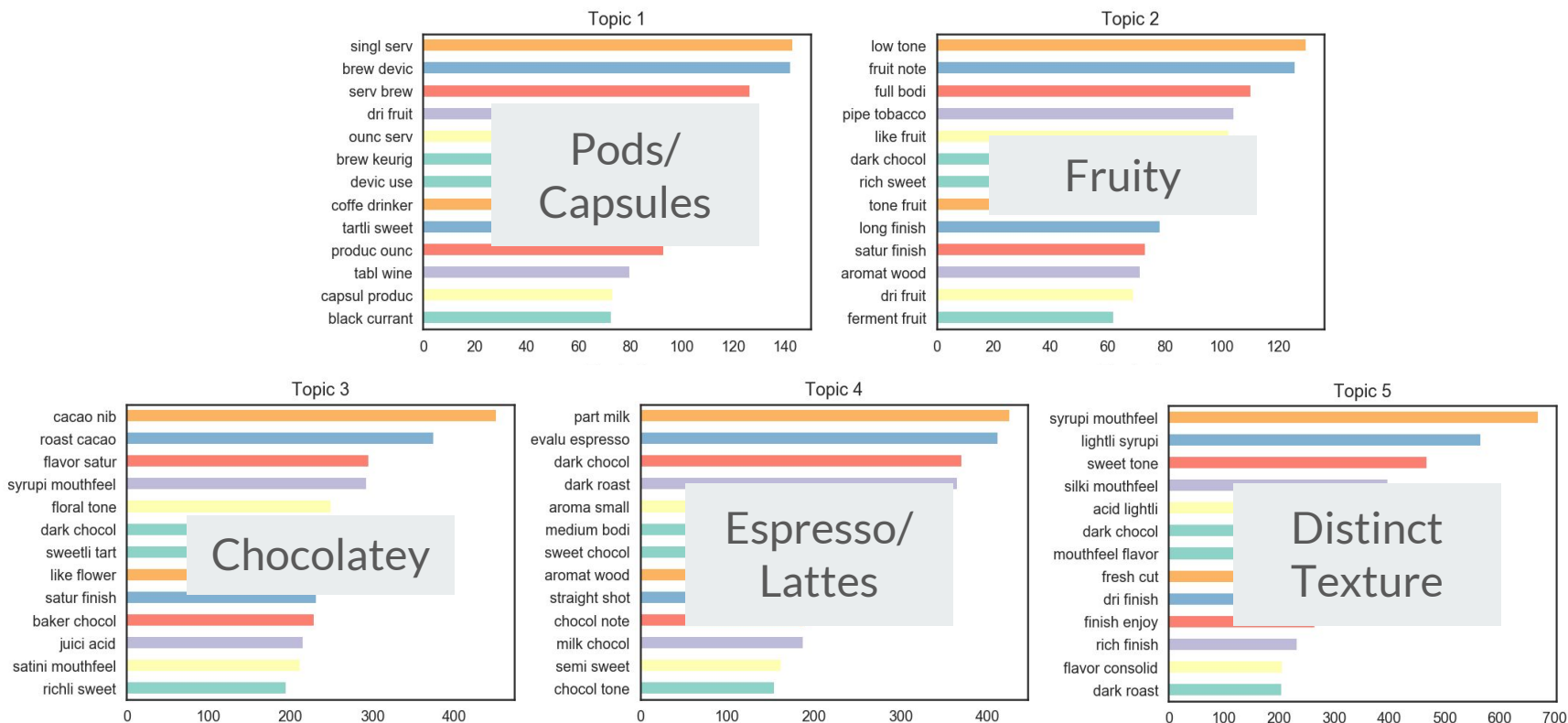
- Detailed description of each coffee

Topic Modeling

| BODY | |
|-------------|----------|
| L I G H T | WATERY |
| | TEA-LIKE |
| | SILKY |
| | SLICK |
| | JUICY |
| M E D I U M | SMOOTH |
| | 2% MILK |
| | SYRUPY |
| | ROUND |
| | CREAMY |
| H E A V Y | FULL |
| | VELVETY |
| | BIG |
| | CHEWY |
| | COATING |



| ADJECTIVES & INTENSIFIERS FOR COFFEE | |
|--|-----------------------------------|
| CRISP BRIGHT VIBRANT TART | MUTED DULL MILD |
| WILD UNBALANCED SHARP POINTED | STRUCTURED BALANCED ROUNDED |
| DENSE DEEP COMPLEX | SOFT FAINT DELICATE |
| JUICY | DRY ASTRINGENT |
| LINGERING DIRTY | QUICK CLEAN |



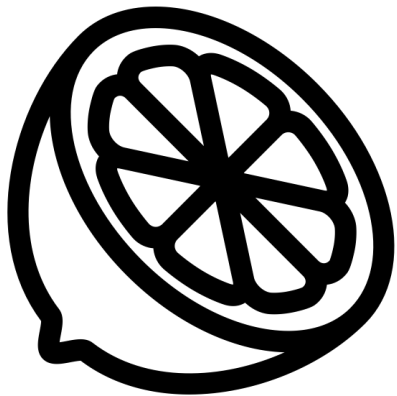
Latent Dirichlet Allocation highlights *possible* categories of coffee

Missing Data

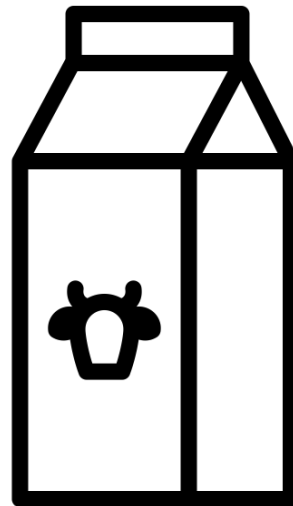
**42% of coffees have no
associated region.**



Acid?



Milk?



Feature Engineering



Dimensionality Reduction

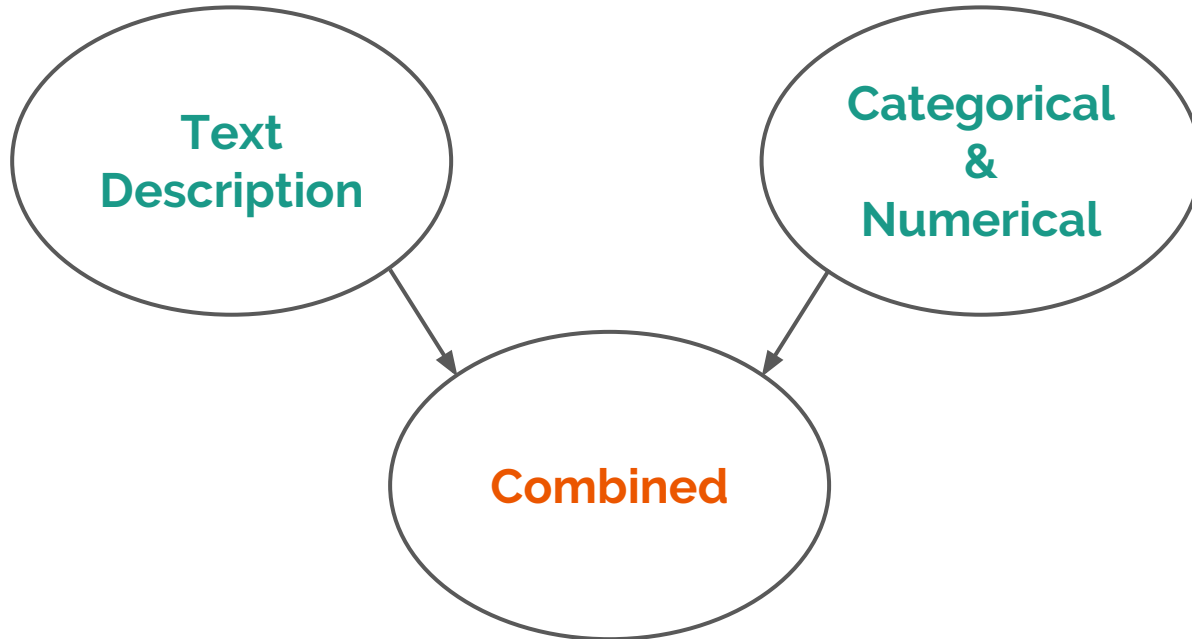
Map features and text data to a vector space in order to compute cosine similarity.

- Principal Component Analysis
 - Account for collinearity within numerical features
- Latent Semantic Analysis
 - TF-IDF
 - TruncatedSVD

Making Comparisons



Cosine Similarity Index





Functionality

- Input coffee's web-page slug (ID) and list of features to compare
- Optional: Filter based on types, region, or roast level
- Returns recommendations:
 - Text-based, feature-based, or combination?
 - Most Similar or Highest Rated coffee out of the n-most similar

Live Demonstration

Limitations & Next Steps

- Only provides results for coffees present in the dataset using it's unique webpage slug.
- The dataset includes coffees that were reviewed as far back as 1997 which may no longer be available.
- Get feedback–Which system works the best? How accurate are the recommendations?
- Integrate recommender system on the website or in a standalone web app:

You might also like:

90

JBC Coffee Roasters
ASOPAP Colombia

Review Date: Jan 2019
Price: \$15.90/12 ounces



Visit JBC Coffee Roasters

93

Flight Coffee Co.
Ethiopia Deri Kochoha

Review Date: Jan 2019
Price: \$17.00/12 ounces



Visit Flight Coffee Co.

[Read Complete Review >](#)

[Read Complete Review >](#)

Thank you!

Questions?





Sources

1. [Americans are drinking a daily cup of coffee at the highest level in six years survey](#)
2. [Coffee tasters flavor wheel](#)
3. Images provided by The Noun Project
 - a. "Coffee by Maxim Kulikov"
 - b. "Coffee by SBTS"