

# Fragrance Recommendation System For FragranceX



Wenting Deng

# Background



# FragranceX

[FragranceX.com](https://www.fragrancex.com) is an online retailer sells a large selections of fragrances.

## Objective:

Build a content-based recommendation engine by using product descriptions.

## Business Assumption

Implement a recommendation system could help:

- Gain customized experience
- Drive sales

*Scent can trigger a memory. Invoke emotion. Ignite passion.*

## Data & Tools

### Tools

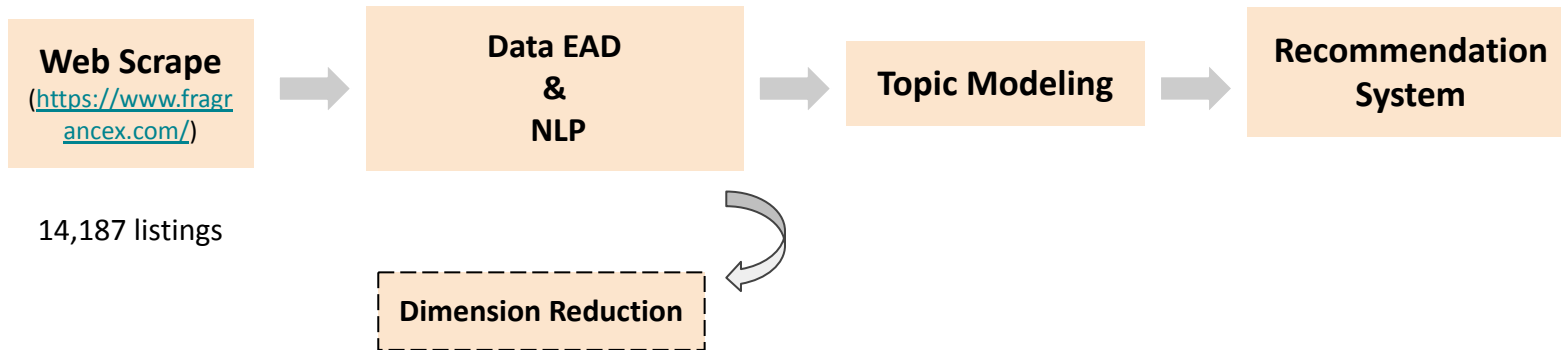
- BeautifulSoup
- Selenium
- Numpy
- Pandas
- NLTK
- Sklearn

### Models

- NMF
- LSA

### App

- Streamlit



# Data & Tools



## Bright Crystal Perfume

By VERSACE FOR WOMEN



PLAY VIDEO

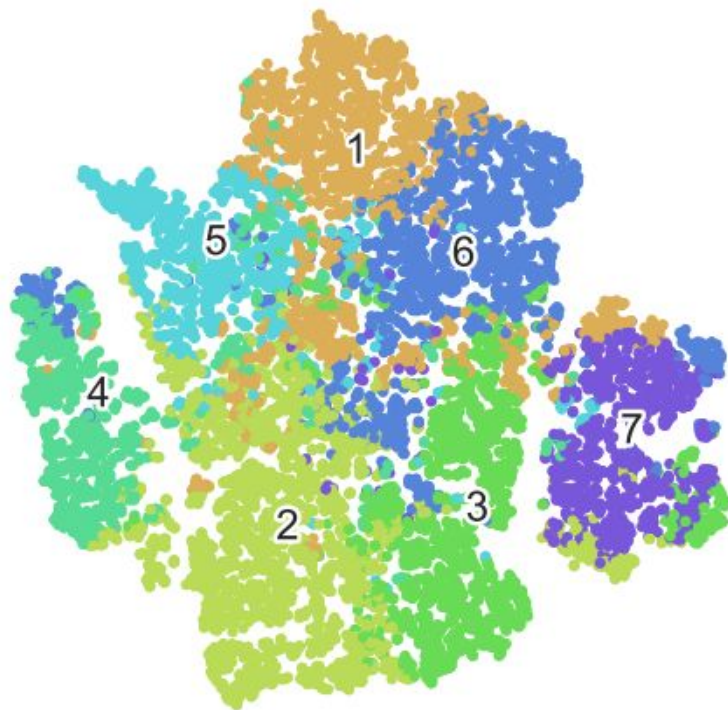
Bright Crystal Perfume by Versace, A beautifully fresh and lush fruity floral scent that's perfect for spring and summer, Bright Crystal layers shimmering blooms, radiant fruit and aqueous accords over a sensual woody amber base. The opening is a delicately tantalizing effusion of pomegranate and tart-sweet yuzu fruit mingled with a hint of frost. Aqueous florals embrace the heart, merging the lush intensity of lotus and sweet magnolia with freshest peony. A warmer base combines precious tones of acajou wood, amber and light musk to leave an ethereal, uplifting trail.

This soft fruity floral scent was created by master perfumer Alberto Morillas. The scent was released by the Italian label Versace in 2006, followed by the sweeter and more intense flanker Absolu in 2013. Other popular floral compositions by the brand include the citrus white floral Eros Pour Femme (2014), the musky amber floral Eclat de Rose (2019), the white floral amber Couture Jasmine (2014) and the powdery citrus floral Yellow Diamond (2011). **All products are original, authentic name brands. We do not sell knockoffs or imitations.**

Average length of document:

**150 words** (exl. punctuations and numbers)

## The Topics



### NMF - 7topics:

**Topic 1:** Woody

**Topic 2:** Floral

**Topic 3:** Fashionable/Popular

**Topic 4:** Oriental

**Topic 5:** Simple

**Topic 6:** Fresh

**Topic 7:** Long Lasting

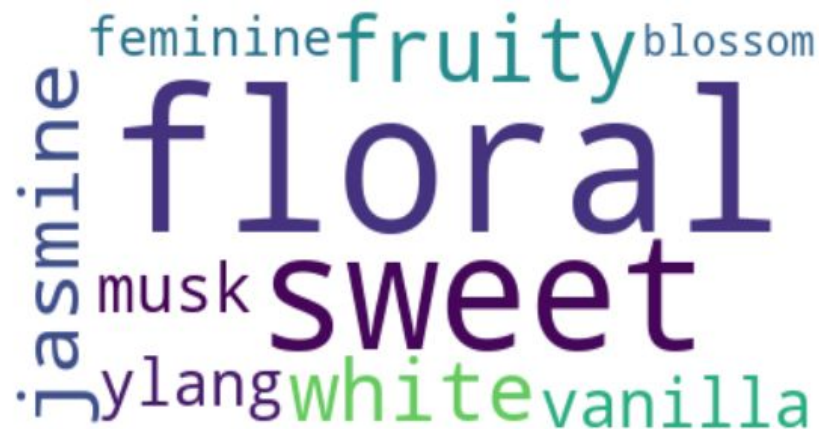


## The Topics

---



**Topic 1: Woody**



**Topic 2: Floral**

# Rec System



## Fragrance Recommendation Engine

Search

Zozo Cologne

Submit

```
0
1 Zozo Cologne- https://www.fragrancex.com/product...
1231 Splendid Pour Homme Cologne- https://www.fragran...
6518 Hollister Not Tide Down Cologne- https://www.fra...
8574 Derrick Silver Cologne- https://www.fragrancex.c...
2642 Penthouse Legendary Cologne- https://www.fragran...
```

### Product name:

5 most similar items (include itself)

## Fragrance Recommendation Engine

Search

Zippo

Submit

```
0
9 Zippo Silver Cologne- https://www.fragrancex.com...
10 Zippo Pink Cologne- https://www.fragrancex.com/p...
11 Zippo Original Cologne- https://www.fragrancex.c...
12 Zippo Mythos Cologne- https://www.fragrancex.com...
13 Zippo Green Cologne- https://www.fragrancex.com/...
```

### Brand name:

5 most popular items (by reviews)

## Fragrance Recommendation Engine

Search

sunny

Submit

```
0
11049 Backyardigans Perfume- https://www.fragrancex.com/products/_cid...
9383 Club De Nuit Milestone Cologne- https://www.fragrancex.com/prod...
10228 Bratz Jade Perfume- https://www.fragrancex.com/products/_cid_pe...
9450 Clean Rain Perfume- https://www.fragrancex.com/products/_cid_pe...
8767 Demeter Daifodil Perfume- https://www.fragrancex.com/products/_...
```

### Other words:

5 most relevant products

## Future Word

— — —

- Optimize the App visuals



--

# Appendix

# Appendix One

---

## Woody

spicy, patchouli, woody, black, oud, warm, blend, wood, leather, oriental, spice, heart, house, cedar, pepper

## Floral

floral, sweet, fruity, white, jasmine, vanilla, musk, ylang, feminine, blossom, orange, heart, peach, flower, powdery

## Fashionable/ Popular

fashion, designer, design, house, clothing, accessory, collection, famous, industry, couture, style, dior, menswear, orange, success

## Oriental

aroma, elixir, sensual, seductive, night, concoction, rich, essence, combine, flacon, exotic, chic, sophisticated, sens, delectable

## Simple

body, fantasy, quality, parfums, mist, simple, coeur, collection, addition, aroma, candle, affordable, signature, sugar, composition

## Fresh

green, citrus, fresh, aromatic, lemon, clean, leaf, woody, crisp, summer, cool, blue, bergamot, tea, orange

## Long Lasting

moderate, sillage, longevity, lasting, spring, summer, heavy, floral, middle, fall, occasion, woody, base, long, winter

# Appendix Two

---



Topic 3



Topic 4

# Appendix Two

---



Topic 5



Topic 6

## Appendix Two

---



A word cloud visualization for Topic 7. The words are arranged in a cluster, with 'sillage' and 'moderate' being the most prominent. Other words include 'lasting', 'heavy', 'floral', 'spring', 'middle', 'fall', 'summer', and 'longevity'. The colors of the words vary, with 'sillage' in green, 'moderate' in blue, and others in various shades of green, blue, and purple.

lasting  
sillage  
heavy floral spring middle  
fall  
moderate  
summer longevity

Topic 7