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# SINESCENT

Fragrance Recommendation System

Marzo de 2025

IRONHACK FINAL PROJECT

# Context and inspiration



## **SYNESTHESIA CONCEPT**

Synesthesia is a neurological condition in which stimulation of one sensory pathway leads to automatic, involuntary experiences in another sense



## **COLOR PSYCHOLOGY**

Color Psychology is the study of how colors influence human emotions, perceptions, and behaviors



## **FRAGRANCE EXPERTISE**

Innovate, adapt, and evolve in my field, creating a seamless connection between what I know and what I will discover

# Today you used +5 fragrances

Fragrances envelop us; let's acknowledge  
and appreciate their true significance.



# Introduction and objective



**Finding the perfect  
fragrance is a very  
personal experience  
—it's all about  
reflecting who you  
are in every moment**

**...but best if you  
have an expert  
advisor**

## **OBJECTIVE 1**

Analysis of historical fragrance data to understand better the industry and most used ingredients

## **OBJECTIVE 2**

Use IA to recommend fragrance

## **OBJECTIVE 3**

Go further and related with fashion industry to boost self identity

# Project methodology

1

## **DATA CLEANING & EXPLORATION**

Data is first cleaned and standardized

2

## **TEXTUAL PROCESSING**

Text descriptions are processed and used to train a similarity model using TF-IDF and KNN

3

## **IMAGE PROCESSING**

Image undergo pre-processing to extract dominant colors and remove distracting elements

4

## **FILTER & RECOMMENDATION**

Text and Image User preferences are combined and integrated to filter and obtain recommended fragrances



# Source Dataset

From Kaggle - Data obtain from webscraping of fragrantica.com

## Size

- N.Rows: 24,063
- N.Columns: 18

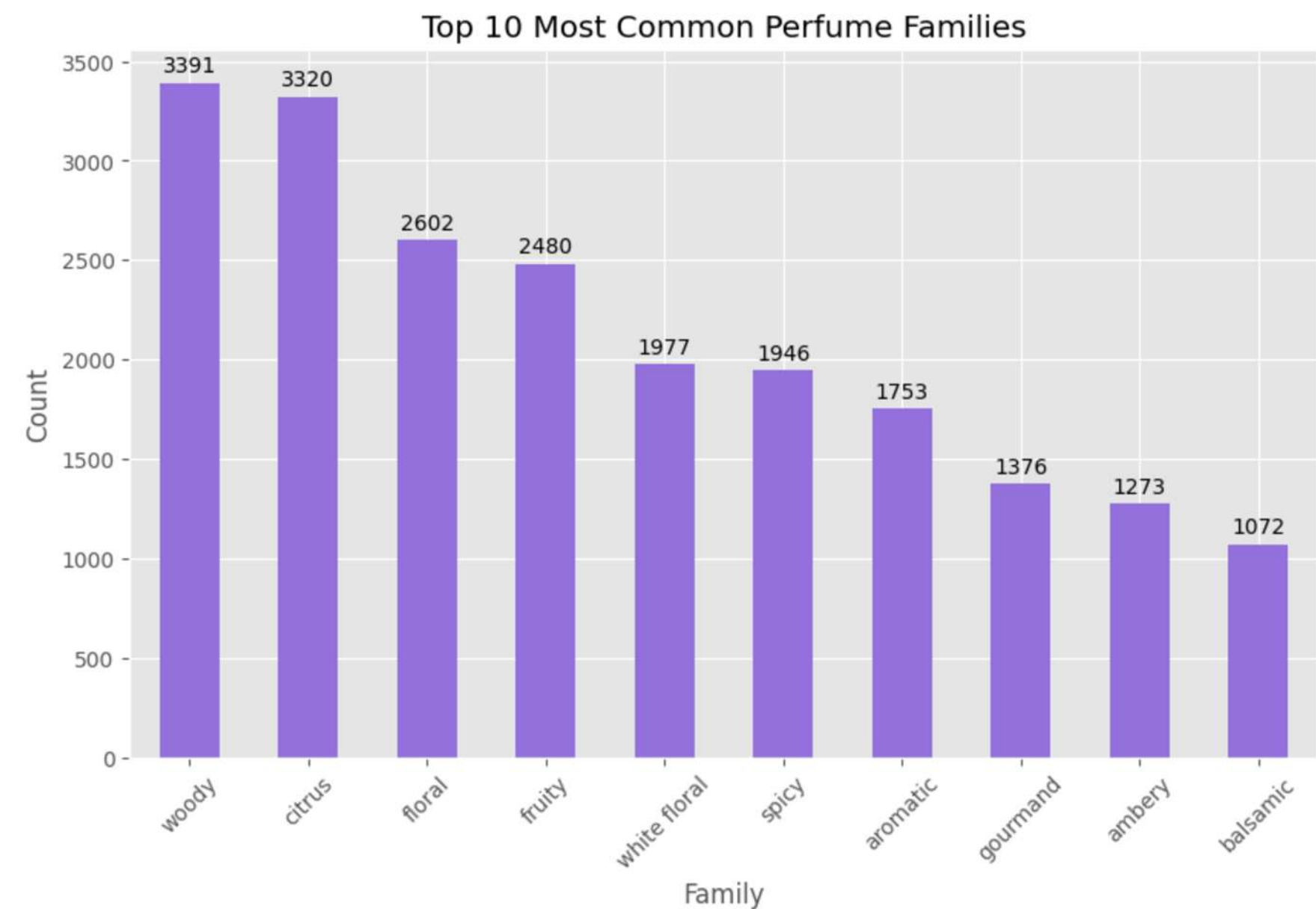
Perfume  
Brand  
Launch Country  
Year  
Gender  
Rating Value  
Rating Count  
Top  
Middle  
Base  
Perfumer  
Main Accords  
+ Family

**+1600 notes**

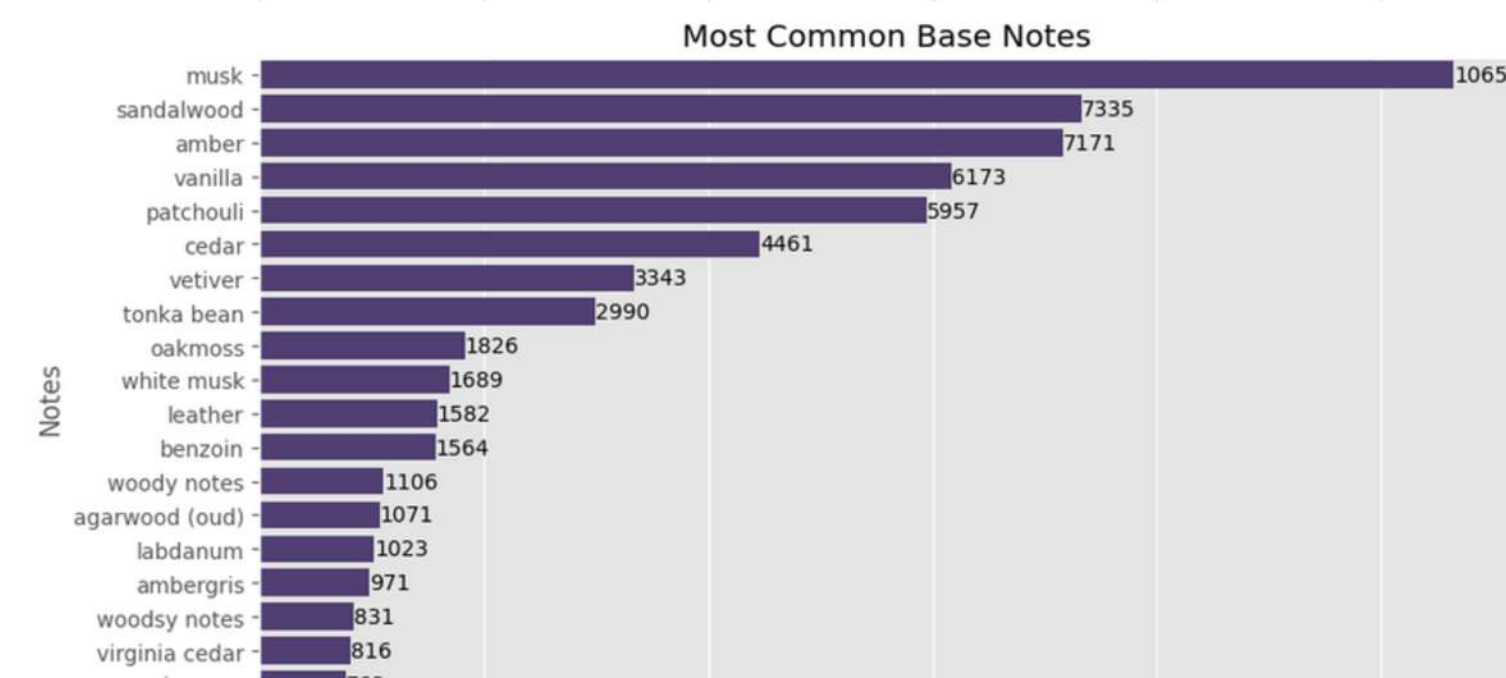
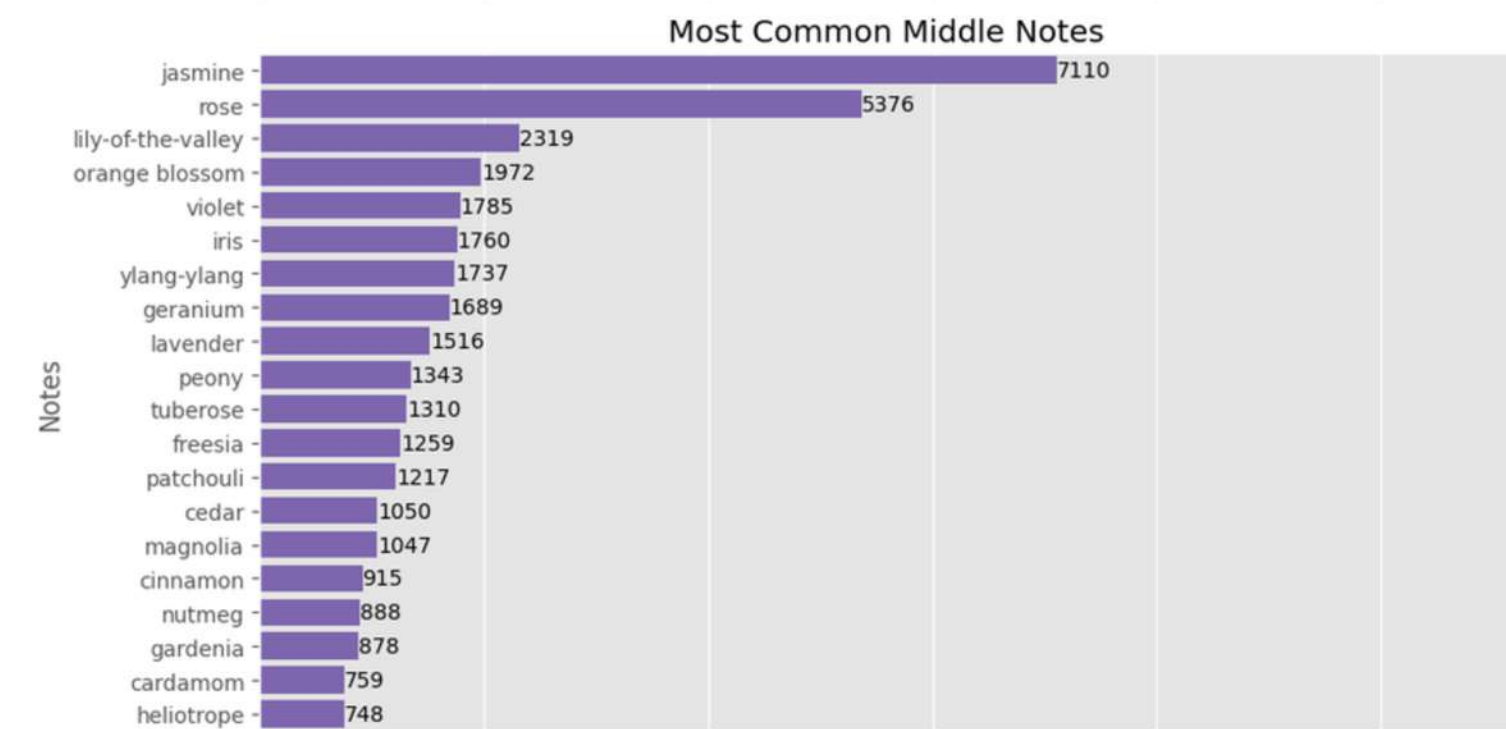
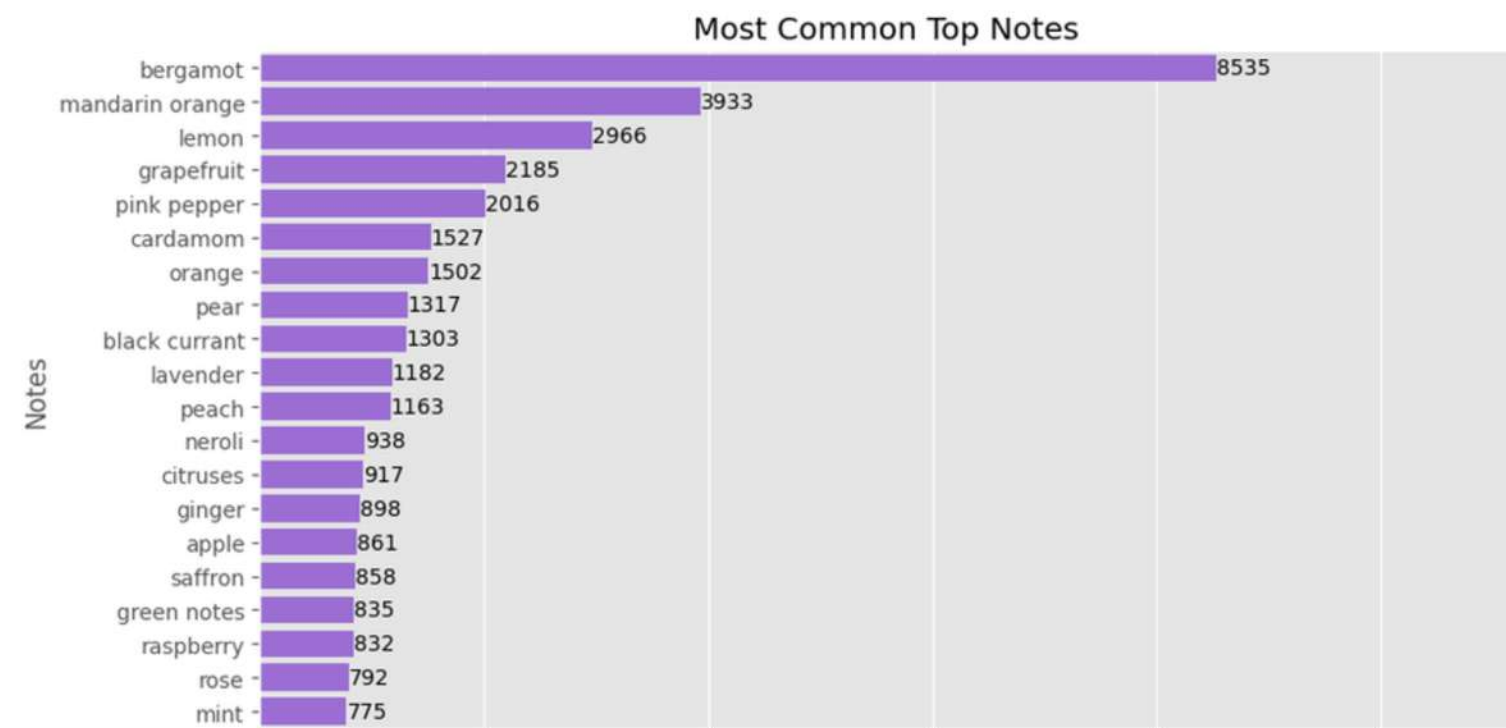
**In 20 families**



# Exploratory Data Analysis



Olfactive descriptors





# Exploratory Data Analysis

29722 comments / 3.57/5



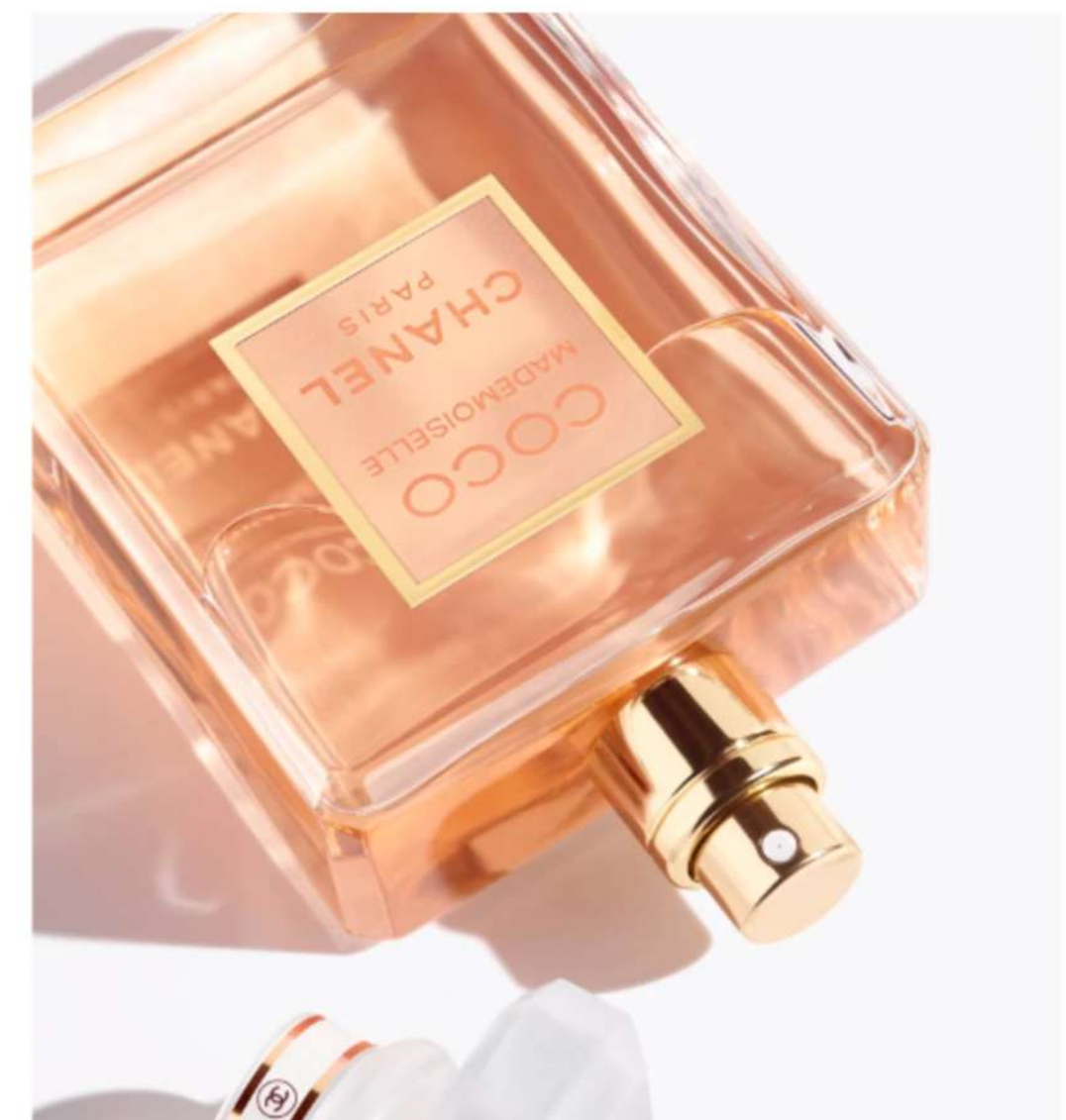
Angel, Mugler (1992)

29708 comments / 3.84/5



Light Blue for her, D&G (2001)

29283 comments / 4.12/5

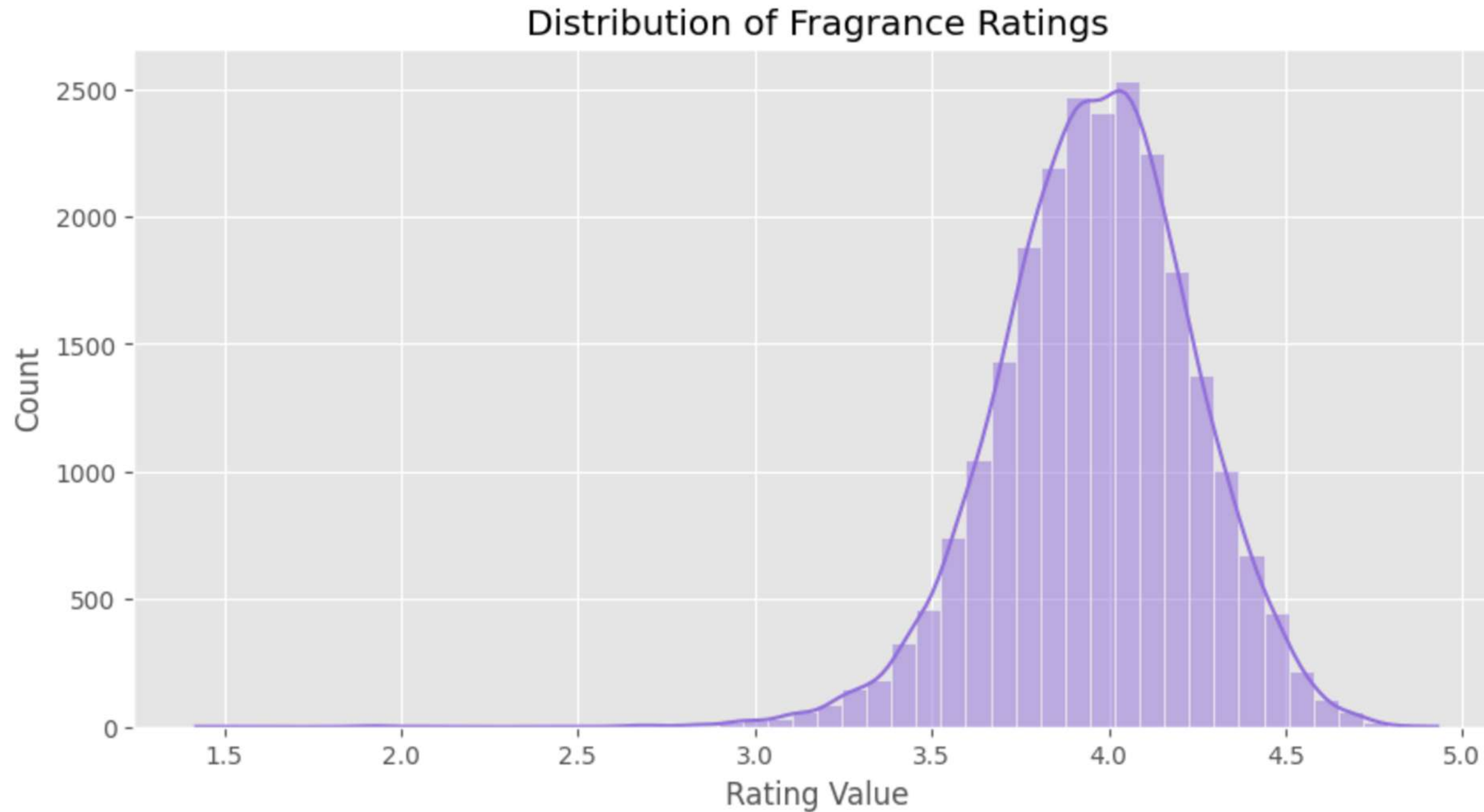


Coco Mademoiselle, Chanel (2001)

Ratings



# Exploratory Data Analysis



Ratings

# Recommendation system

## Text based

Text Processing (processing\_text.py):

- Cleaning and Formatting
- Query Expansion: The `expand_query` function uses NLTK's WordNet

Text-Based Recommendation (recommender\_text\_based.py):

- Model Loading: retrieves the trained KNN model and TF-IDF vectorizer from pickle files.
- Generating Recommendations: vectorizes the enriched query, and uses KNN to find fragrances with text profiles similar to the query



# Recommendation system

## Image based

Consists of two main modules:

Image Processing (processing\_image.py):

- Background Removal
- Face Removal
- Dominant Color Extraction

Image-Based Fragrance Recommendation (recommender\_image\_based.py):

- Maps colors to keywords and assigns aromatic accords based on context
- The main function loads a fragrance database, builds a keyword set from detected colors, situation, gender, brand, and favorite notes, and uses these to filter the database via a text-based recommendation function.

# Streamlit

×

### Preferencias de Recomendación

Situation

romantic

Gender

|

male

female

unisex

Exclude Notes (separadas por coma)

Número de Recomendaciones

5

- +

## Procesamiento de Imagen

Sube una imagen (formatos: jpg, jpeg, png) para extraer colores y obtener recomendaciones.

Selecciona una imagen



Drag and drop file here

Limit 200MB per file • JPG, JPEG, PNG

Browse files

Deploy



# Future possibilities

- Deep Learning Integration for Image Analysis
- Enhanced Natural Language Processing
- Up to date fragrance database

The background is a solid light pink color. There are two large, semi-transparent circles: a light orange one in the top right corner and a light pink one in the bottom left corner.

# Thank you!

ANY QUESTION?