Recipe explorer
A guide to a better meal

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Introduction

While starvation has almost disappeared in most developed countries, people are nowadays more likely to die from overeating than from a lack of food. Taking the healthiness aspect in food recommendation systems can help people without special knowledge to eat the right food.

These recommendations should take into account the user's tastes and give further information about the nutritive aspect of the recipes.

Goal of the project

Our goal is to create a recipe recommendation system that would allow users to enjoy generated meals according to their preferences, while allowing them to see information about the healthiness of their choices.

The recipes dataset

Data collection

We explored the storage of Internet in order to use the unlimited knowledge about recipes available online. We have performed scraping of one of the most popular Food inspired search engines: yummly.com.

Our data in numbers

33,872 — Total number of recipes
4,046 — Number of users
33 — Number of cuisines
27 — Average number of saved recipes per user
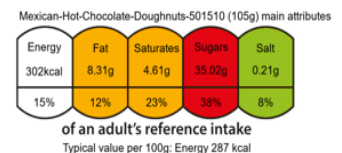109,264 — Total number of saved recipes

Recommendations

In order to cook some good recommendations we need a good set of users, their saved recipes and cosine distance between, to find some similar users and recommended them recipes.

Interactive recommendations

In this recommendation system, the user can select constraints he wants his recommendations to respect. These constraints can be of different types: nutritional, time of cooking, type of cuisine, etc.

Then, the recipes are filtered to keep only those that respect the given constraints, and finally we compute the score of the remaining recipes to propose the best ones in real-time. Furthermore it displays the nutritional values of those recipes and also gives links to the recipes web pages.

Healthiness

For each recipe, we calculate several healthiness scores and we would like the user to be able to visualize them easily. A very intuitive way to do so is to match a color to each score: green, orange and red for respectively healthy, moderately healthy and unhealthy.
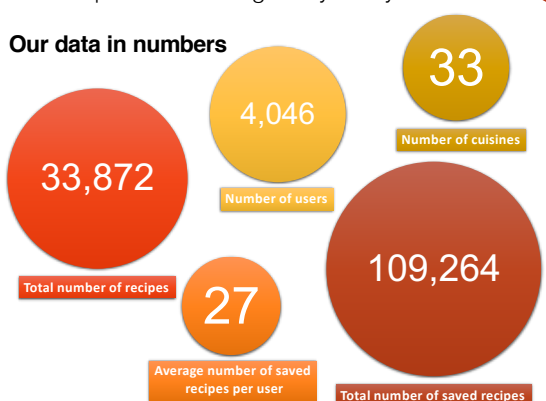

Mexican-Hot-Chocolate-Doughnuts-501510 (105g) main attributes

Energy	Fat	Saturates	Sugars	Salt
302kcal	8.31g	4.61g	35.02g	0.21g
15%	12%	23%	38%	8%

of an adult's reference intake
Typical value per 100g: Energy 287 kcal
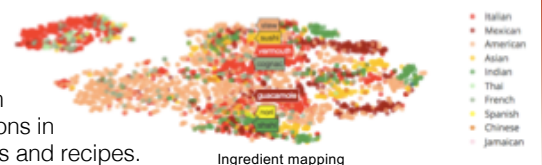
Cuisine similarity

Cosine similarity between the vectors of cuisines. The cuisine vector is a vector of ingredients found in recipes of that cuisine together with the number of their occurrences.

Most common ingredients in Italian cuisine

Food2Vec

Answers to a question of how ingredients themselves form strong connections in different cuisines and recipes.

Ingredient mapping

Italian, Mexican, American, Asian, Indian, Thai, French, Spanish, Chinese, Jamaican

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