I'll Bake What She's Having!

Using Computer Vision and NLP to Suggest Recipes from BonAppetit.com

Tim Dooley, PhD

ba

METIS

What should I make?

Quarantine especially renewed interest in home cooking and baking. Home cooking as a meal source rose from 33-55%.

QSR Magazine, May 2020

Instagram has provided an outlet to share food culture (and brag) about creations.

Forbes Magazine, Oct. 2020

Bon Appetit

A 64 year old publication owned by Condé Nast

Wildly popular YouTube Channel (1.3 billion + views) and Social Media

Brad Leone of BA Hosts *It's Alive*

Methodology

Collection

Requests/BeautifulSoup/Selenium

~5k Recipes and Images from BA

Modeling

- NLP for recipe Topic Modeling
- “I’ll Bake What She’s Having”: Computer Vision BA Recipe Suggestion
- BA Ingredient Genie: Recommender System Based on User Text

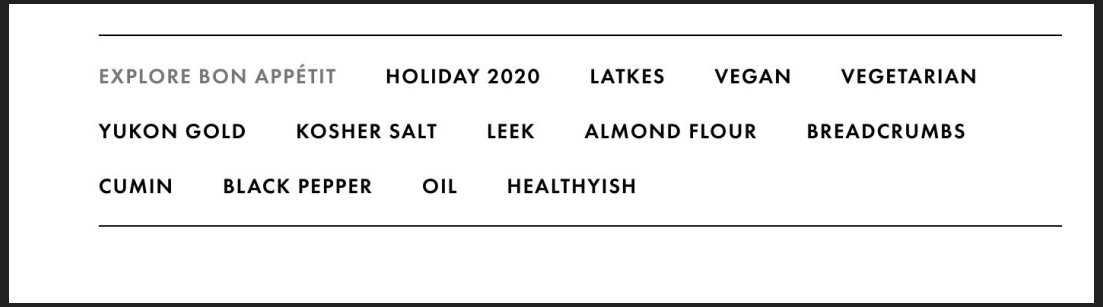
Initial NLP Topic Modeling

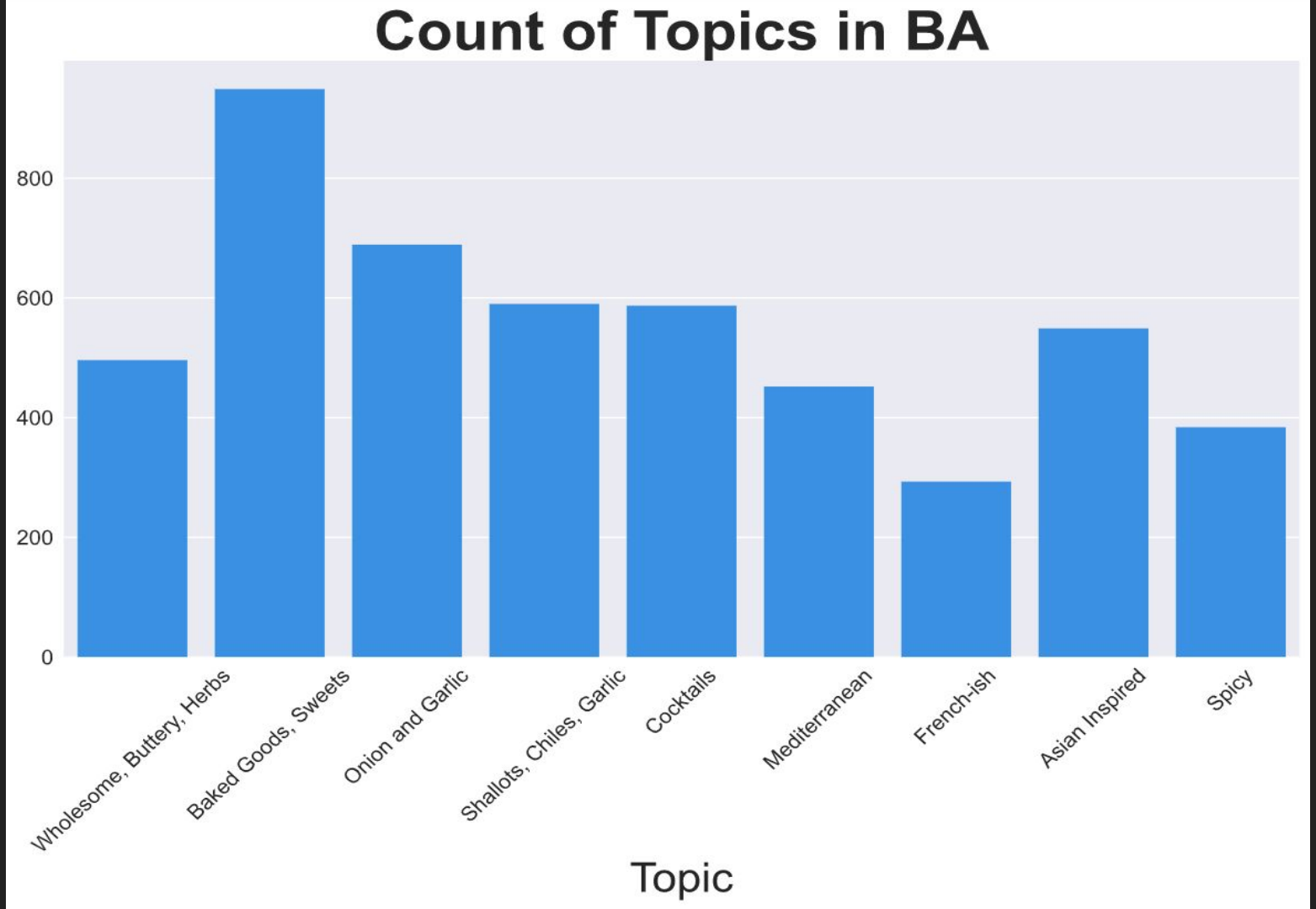
Problem: Bon Appetit topics

- Subjective
- Inconsistent
- Not always ‘topics’

Solution:

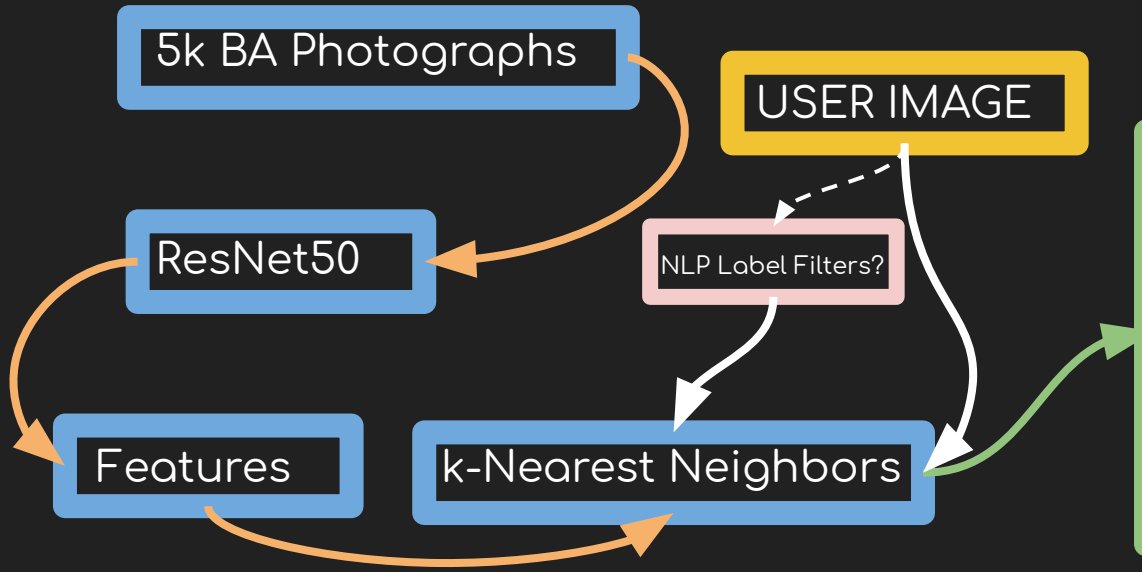
- Non-Negative Matrix factorization
- Topic Modeling to 9 major topics




Count of Topics in BA
800
600
400
200
0
Wholesome, Buttery, Herbs
Baked Goods, Sweets
Onion and Garlic
Shallots, Chiles, Garlic
Cocktails
Mediterranean
French-ish
Asian Inspired
Spicy
Topic

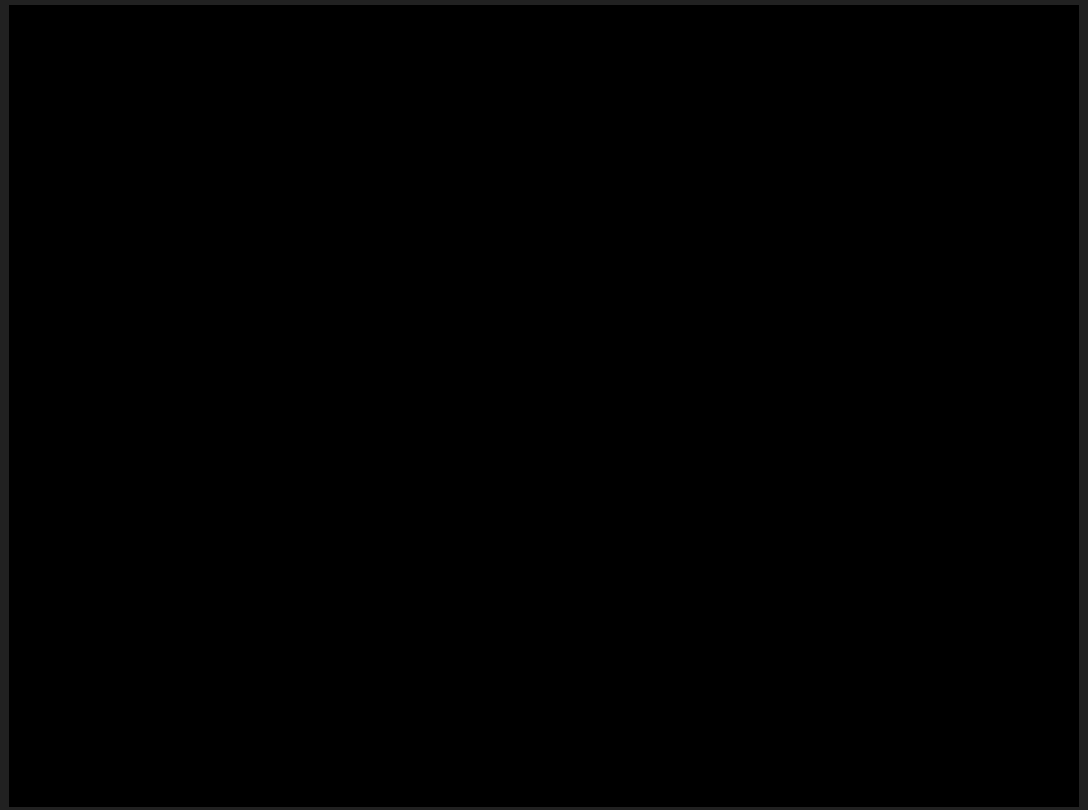
“I’ll Bake What She’s Having!”

Image Retrieval/Reverse Image Search model:

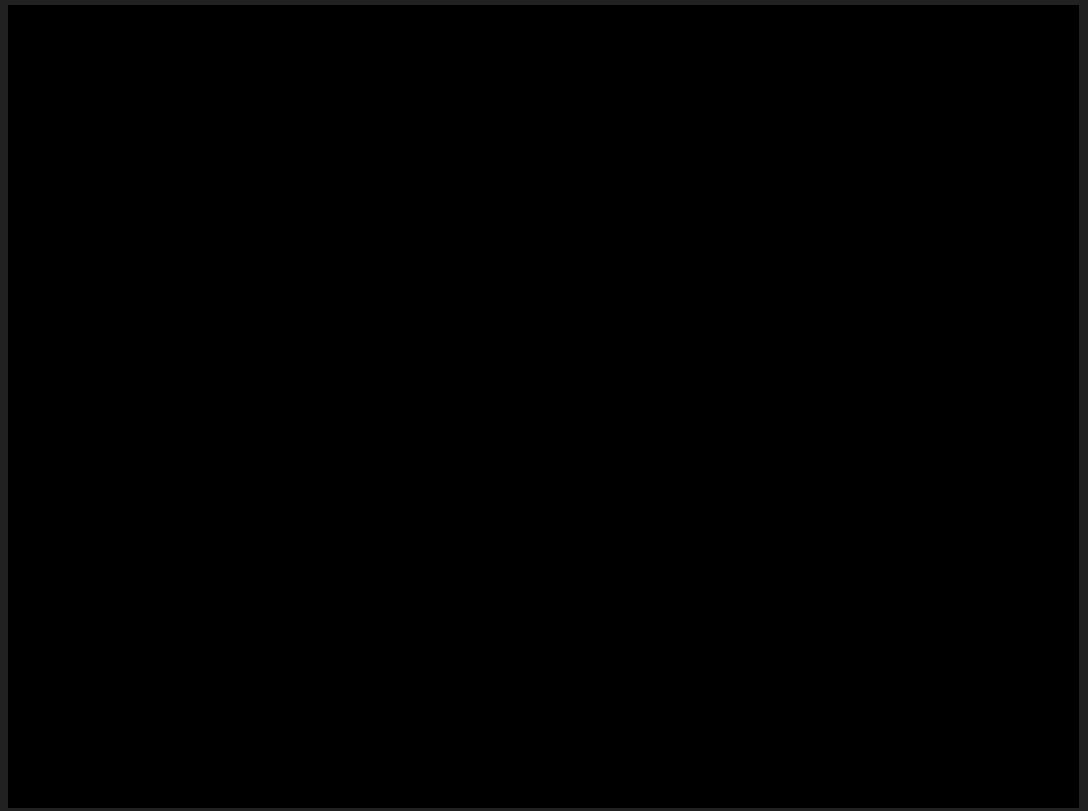


Let’s Try With a Blurry Image of Meatballs

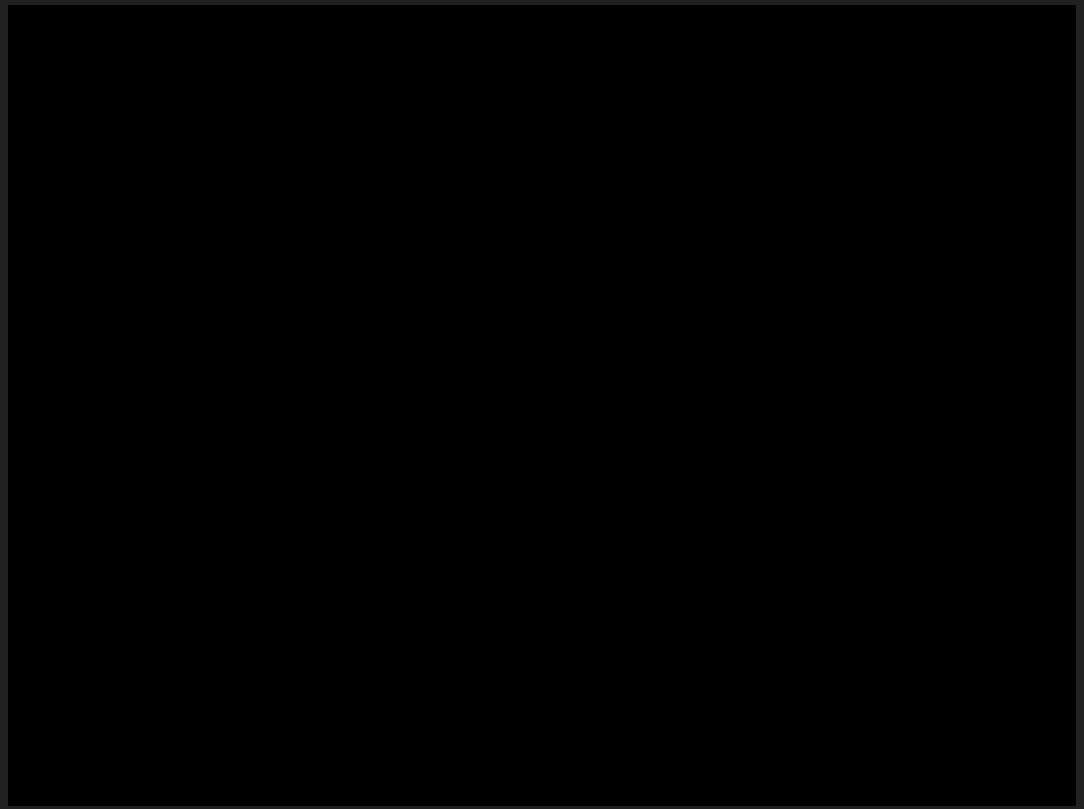
I like that, but I don’t eat meat!



What's That Drink?



Ok, but what if it was ‘Spicy’?

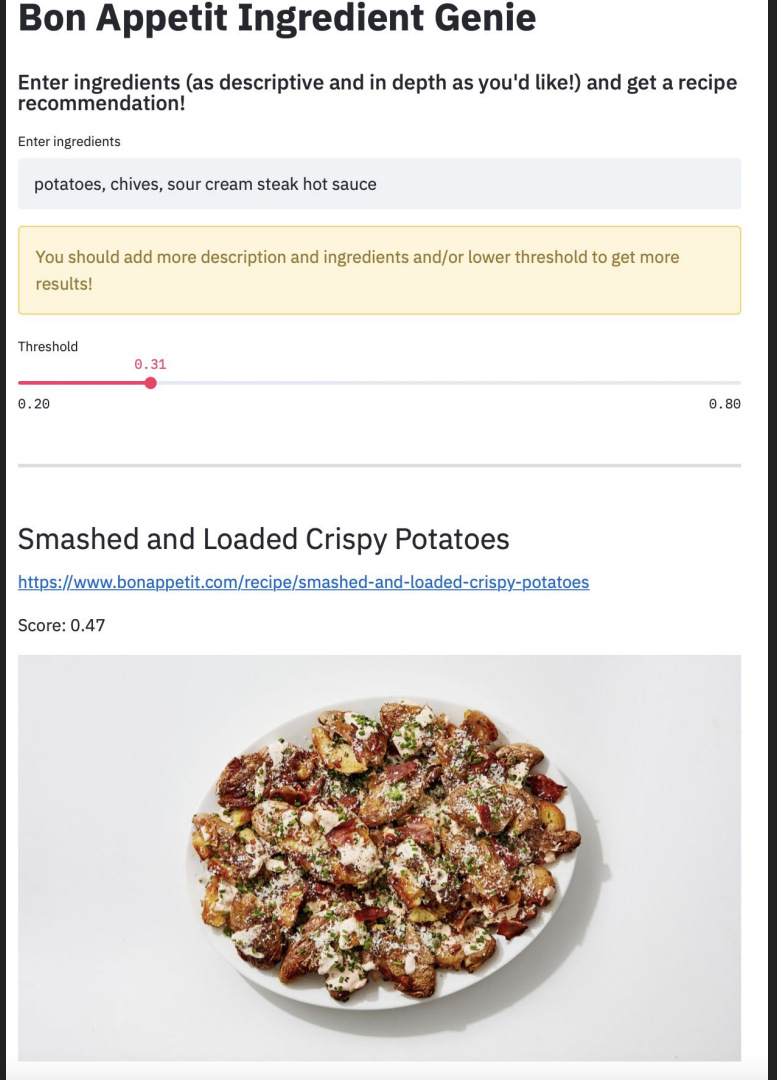


What should I make?

What if I don't have a picture, just ingredients or an idea?

Enter:

Ingredient Genie:
BA Recommender System



Thank You

twdooley

Timothy W. Dooley, PhD