

I'll Bake What She's Having!

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

The logo for BonAppetit, featuring the lowercase letters 'ba' in a white serif font on a black square background.

Tim Dooley, PhD



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



Brod 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

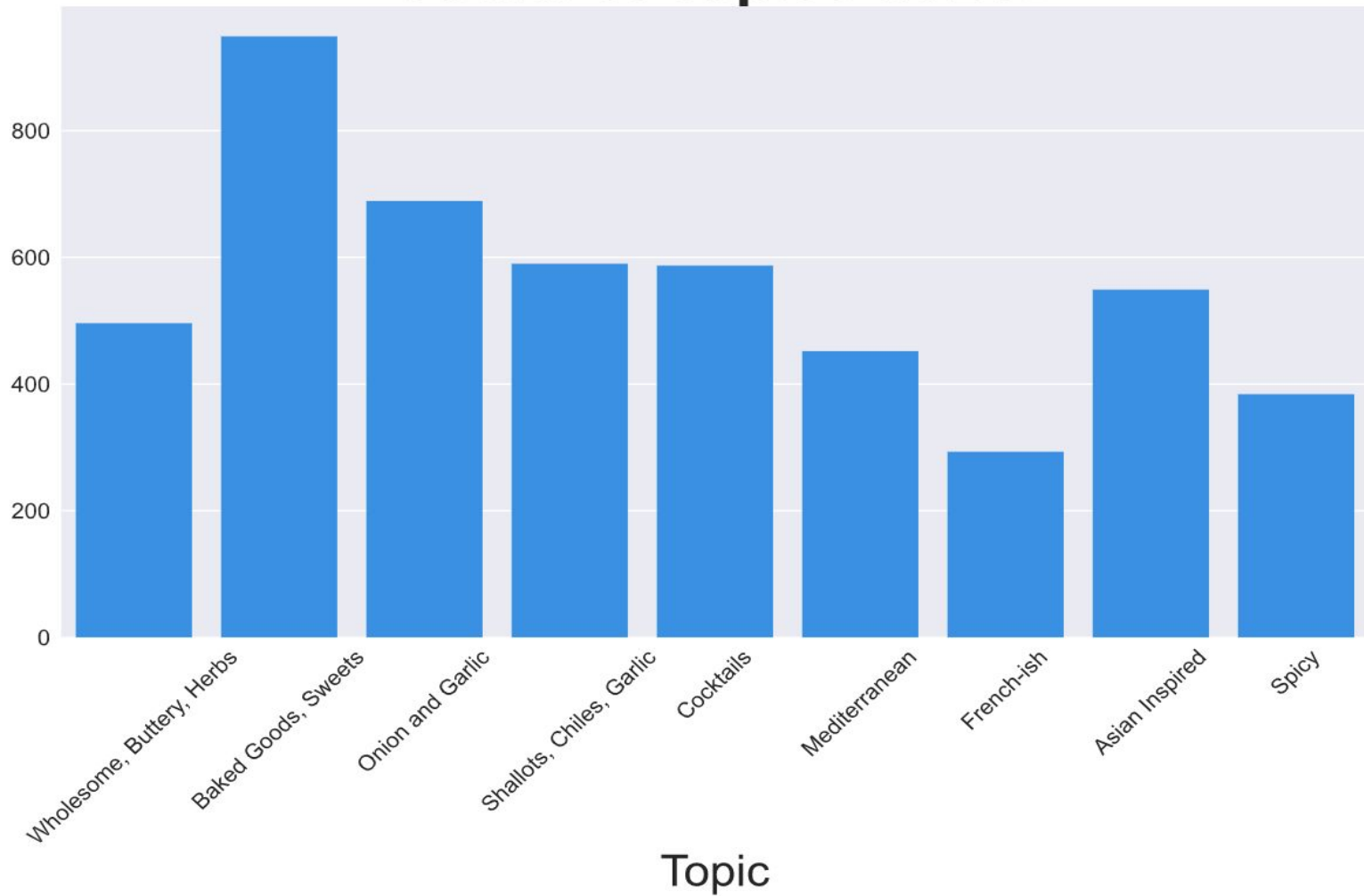
- Subjective
- Inconsistent
- Not always 'topics'

Solution:

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

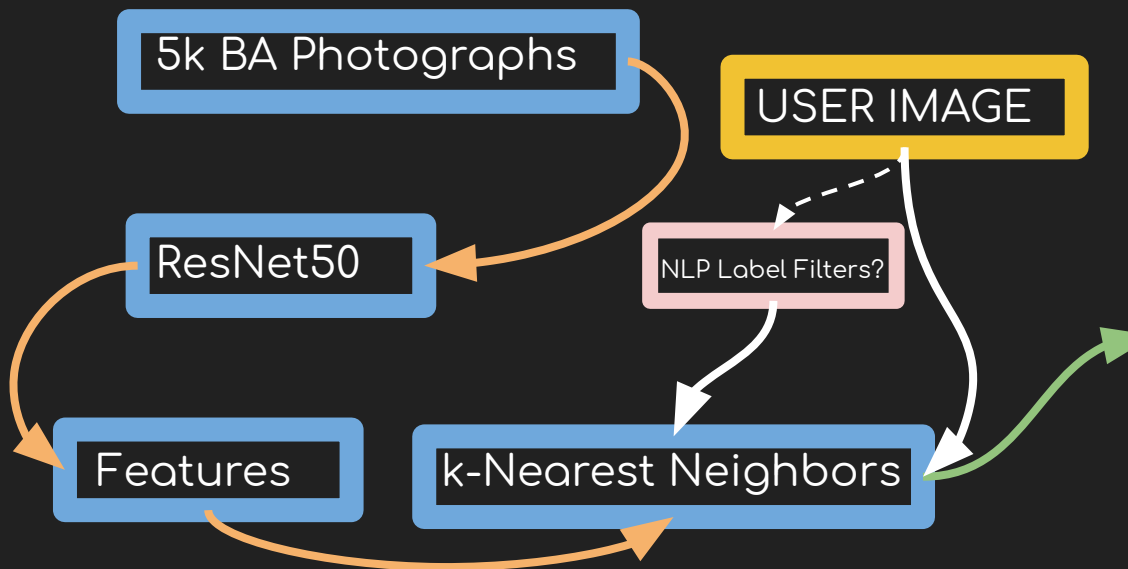
EXPLORE BON APPÉTIT	HOLIDAY 2020	LATKES	VEGAN	VEGETARIAN
YUKON GOLD	KOSHER SALT	LEEK	ALMOND FLOUR	BREADCRUMBS
CUMIN	BLACK PEPPER	OIL	HEALTHYISH	

Count of Topics in BA

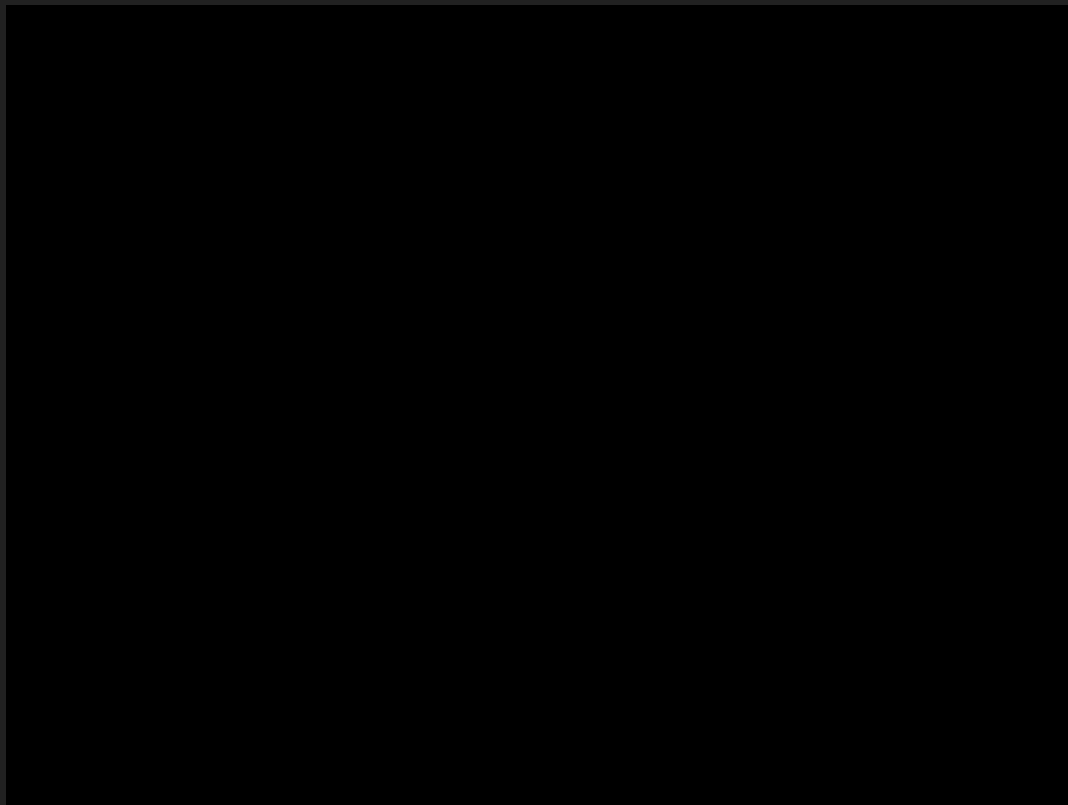


“I’ll Bake What She’s Having!”

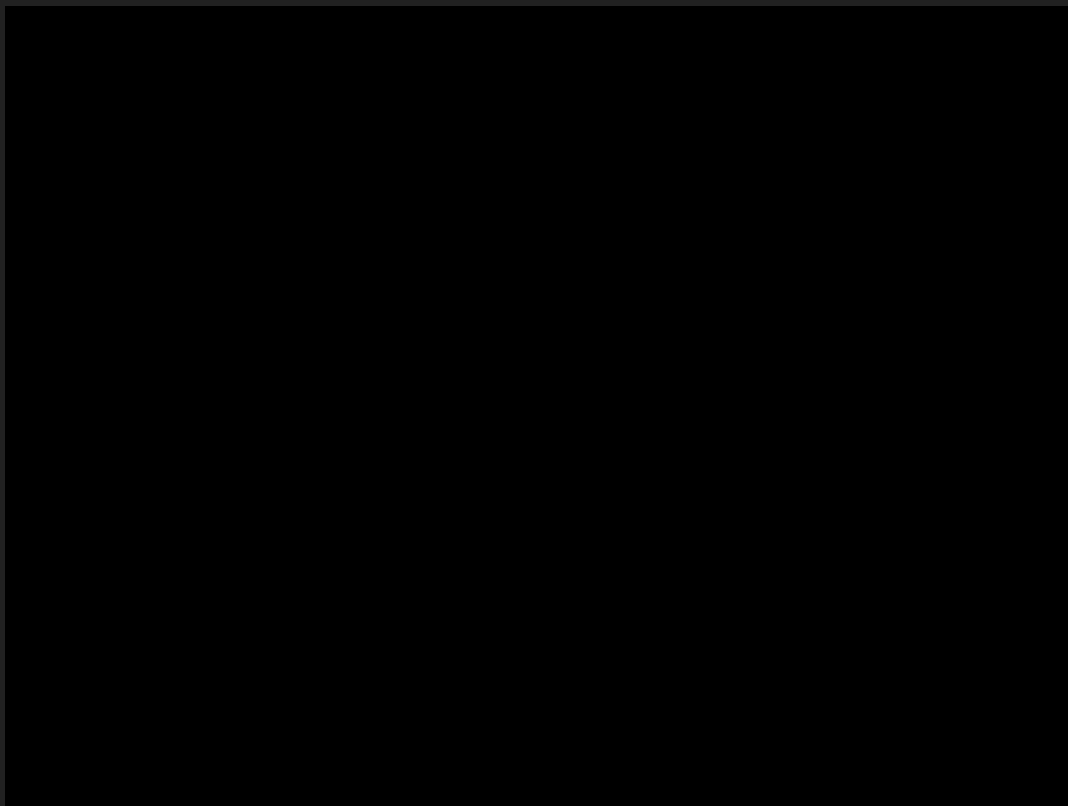
Image Retrieval/Reverse Image Search model:



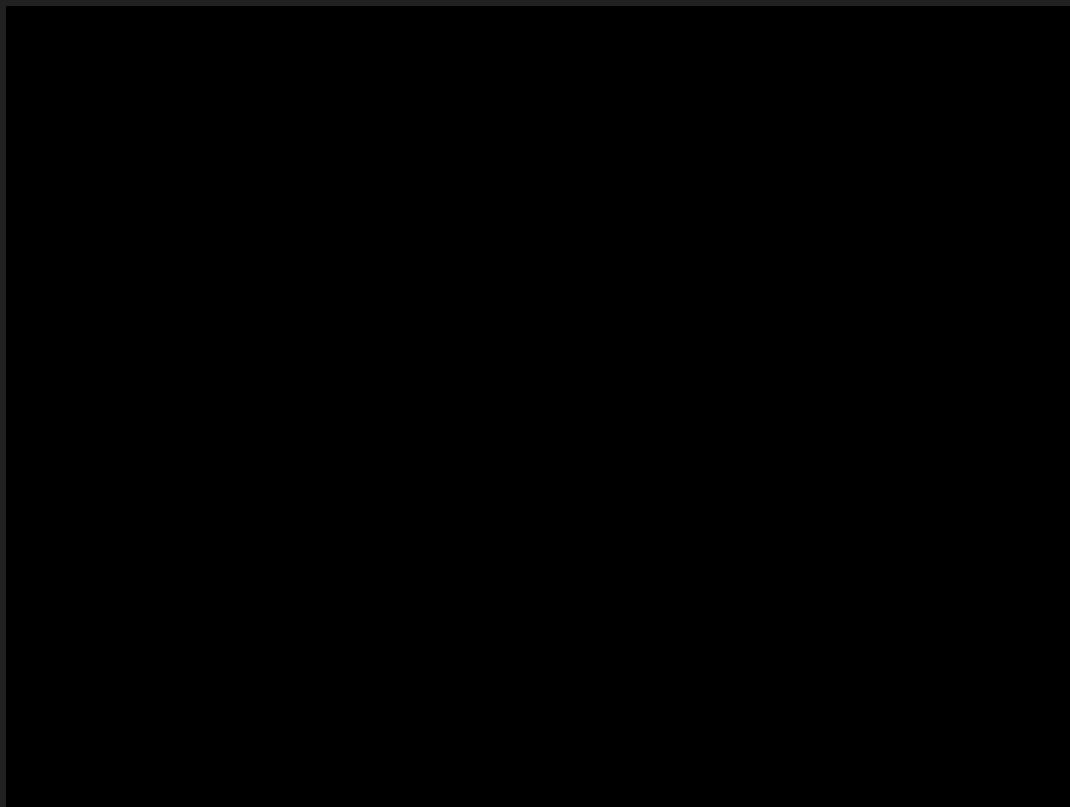
Let's Try With a Blurry Image of Meatballs



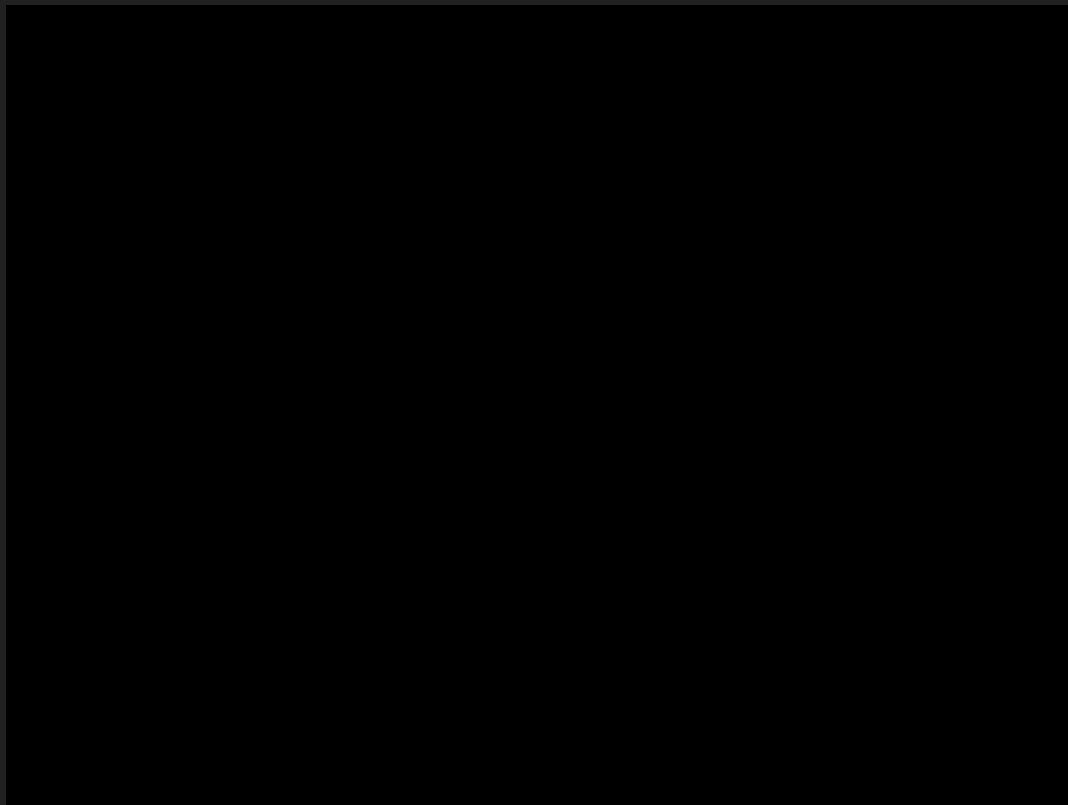
I like that, but I don't eat meat!



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*

Bon Appetit Ingredient Genie

Enter ingredients (as descriptive and in depth as you'd like!) and get a recipe recommendation!

Enter ingredients

potatoes, chives, sour cream steak hot sauce

You should add more description and ingredients and/or lower threshold to get more results!

Threshold

0.31

0.20

0.80

Smashed and Loaded Crispy Potatoes

<https://www.bonappetit.com/recipe/smashed-and-loaded-crispy-potatoes>

Score: 0.47



Thank You



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