3ingredients

A Knowledge-Based Recipe Recommender System

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June 8, 2020

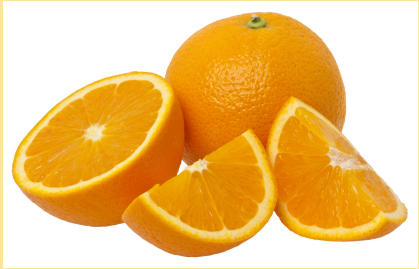
Ugh...

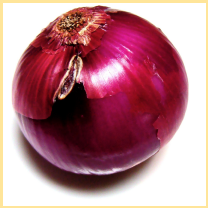
What am I going to make for dinner?

Ugh...

What am I going to make for dinner?

What do I have on hand?





Is this going to go bad?

How much effort am I willing to exert to use what I have?

How to Get the Data to Help

- Data Collection and Processing
- Effort Metrics
- Recommender Systems
- THIS Recommender
- Demo
- Shortcomings / Next Steps

Data Collection

Recipe 1M+ Dataset

Epicurious Kaggle Dataset

Recipe Box Dataset

How to Measure Effort

- Ingredient Count
- Convolution
- Moves
- Technical Difficulty

How to Measure Effort

LIX, a Measure of Readability

$$\mathrm{LIX} = \frac{A}{B} + \frac{C \cdot 100}{A}$$

A = number of words

B = number of sentences

C = number of “long words”

Near 20 = Easy to Read

Near 60 = Difficult to Read

Moves and L-Score

spaCy

Count of Actions → Moves

Technical Difficulty → L-Score

Whisk, Mix, Stir =
Novice Tier

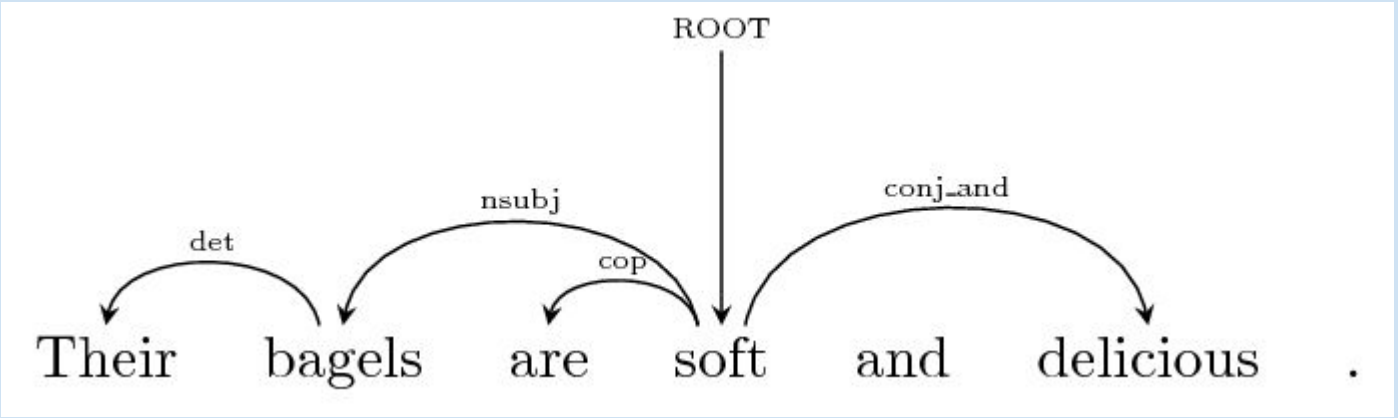
Quenelle, Truss =
Advanced Tier

Ingredient Isolation

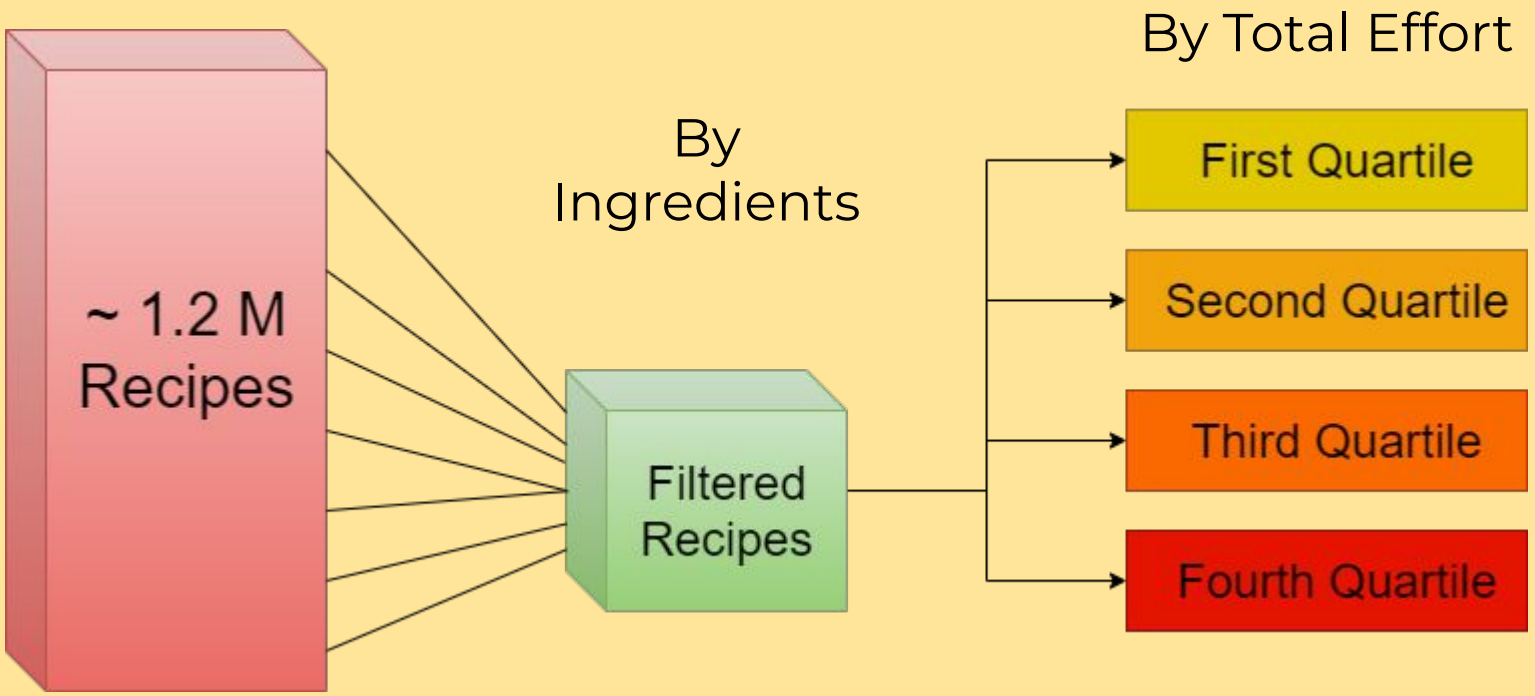
4 medium red tomatoes, seeded and diced

tomatoes

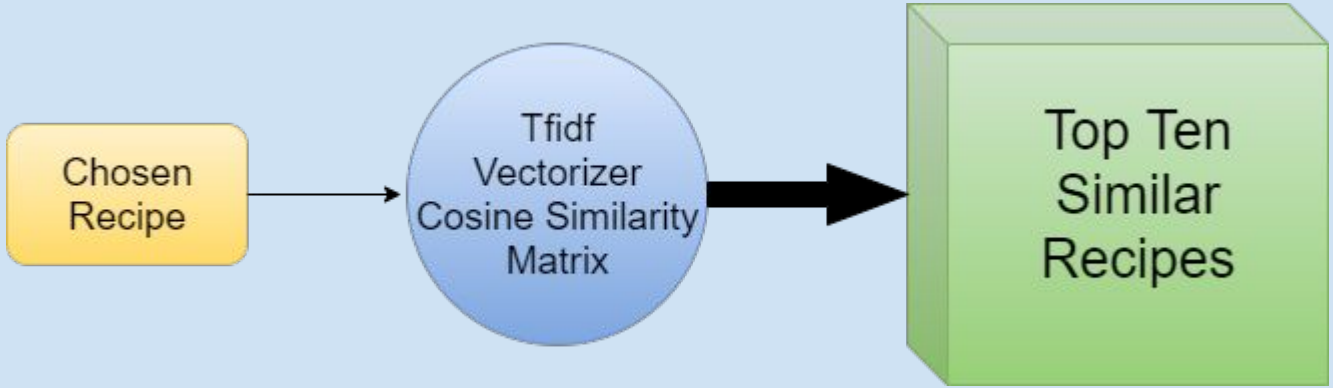
The Garlic Problem



Phase One

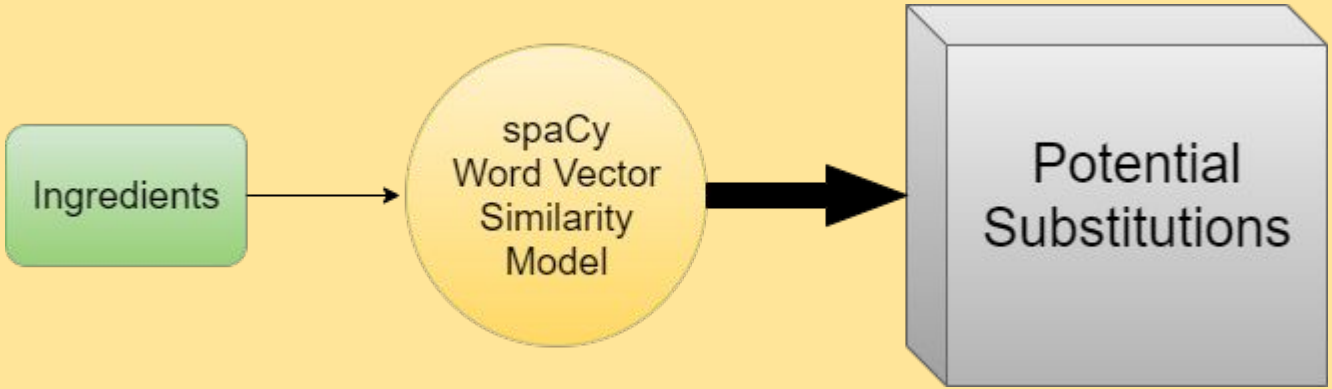

~ 1.2 M Recipes
By Ingredients
Filtered Recipes
By Total Effort
First Quartile
Second Quartile
Third Quartile
Fourth Quartile

Phase Two



Term-Frequency Inverse-Document-Frequency

Phase Three



Pre-Trained Word Vector Similarity from spaCy

Future Development

Ingredient Issues - “cups.” and “green onions”

Retrain spaCy

Tune Metrics

Database Conversion

App Deployment

https://github.com/leejlittlejohn/3ingredients

https://www.leelittlejohn.com/