

3ingredients

A Knowledge-Based Recipe Recommender
System

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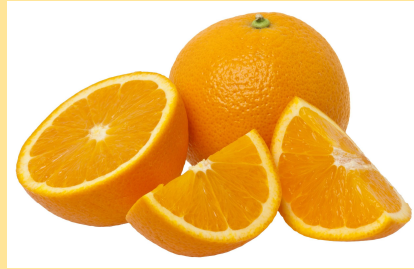
Ugh...

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

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

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

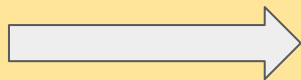
spaCy

Count of Actions



Moves

Technical Difficulty



L-Score

Whisk, Mix, Stir =
Novice Tier

Quenelle, Truss =
Advanced Tier

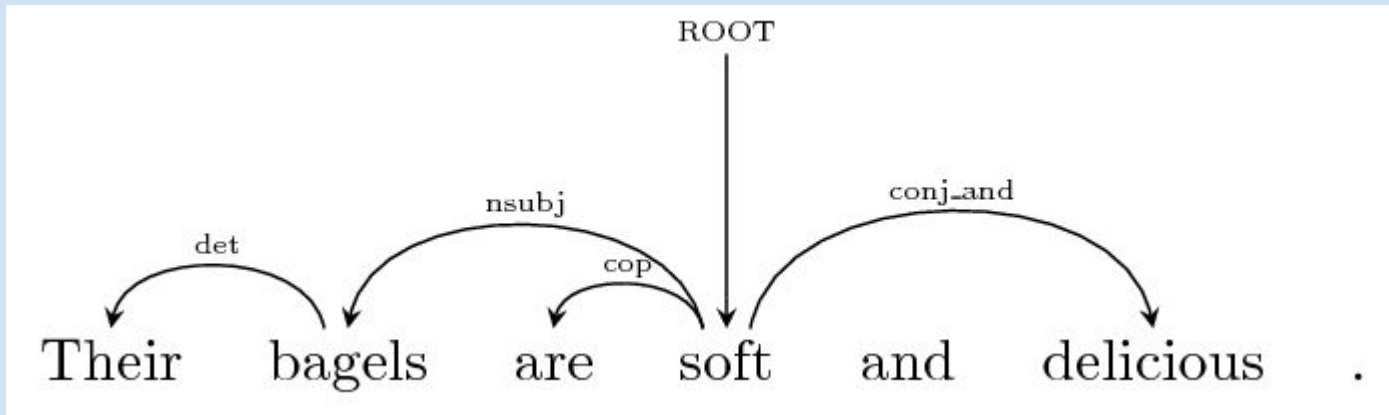
Ingredient Isolation

4 medium red tomatoes, seeded and diced



tomatoes

The
Garlic
Problem



Recommender Systems

Content-Based Systems

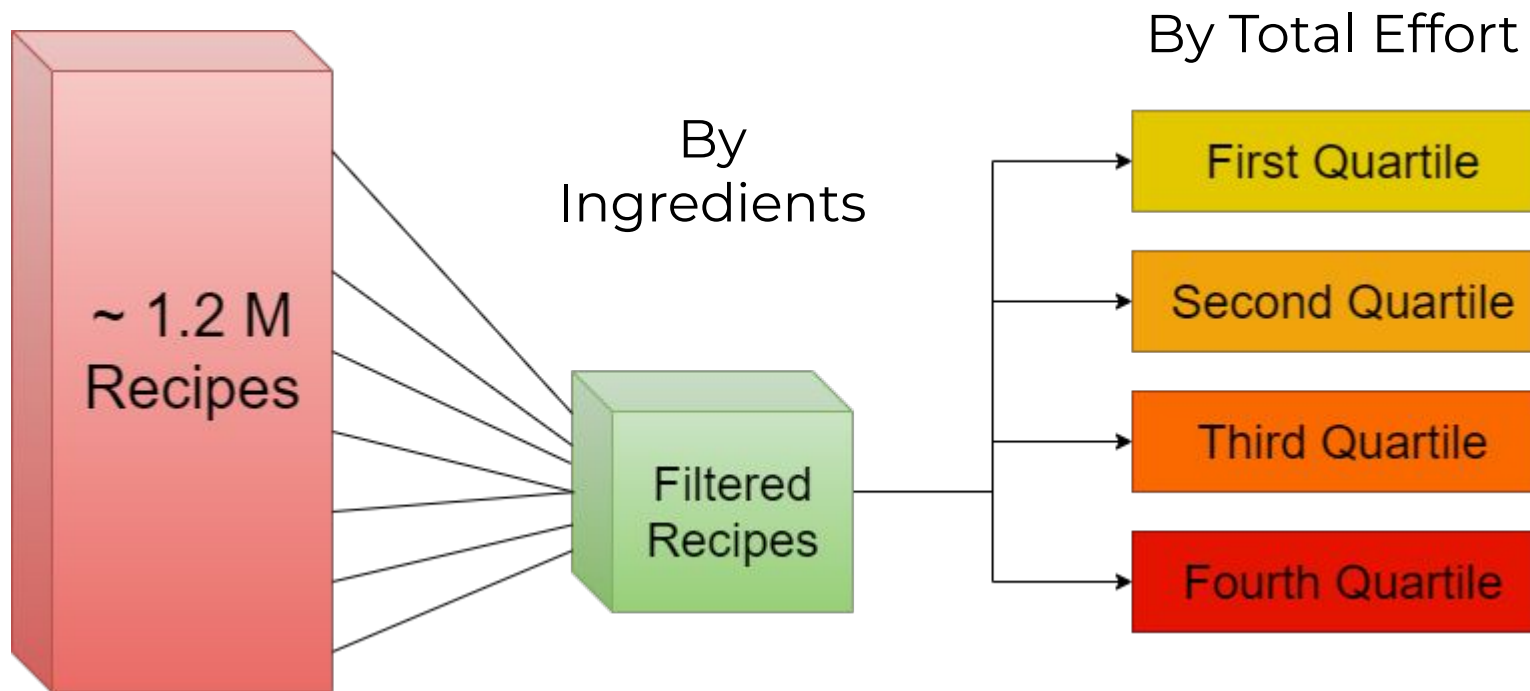
Collaborative Systems

Knowledge-Based Systems

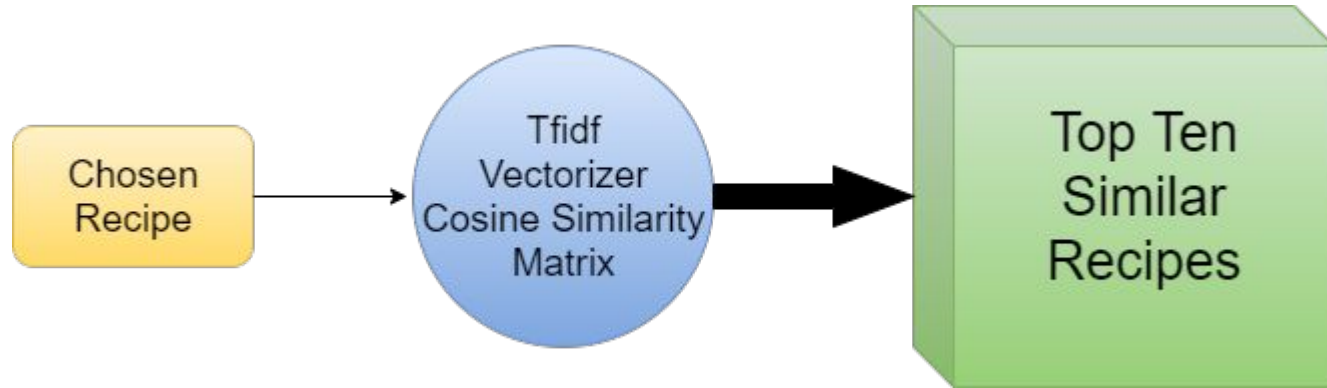
- Conversational
- Search-Based

Hybrid Systems

Phase One

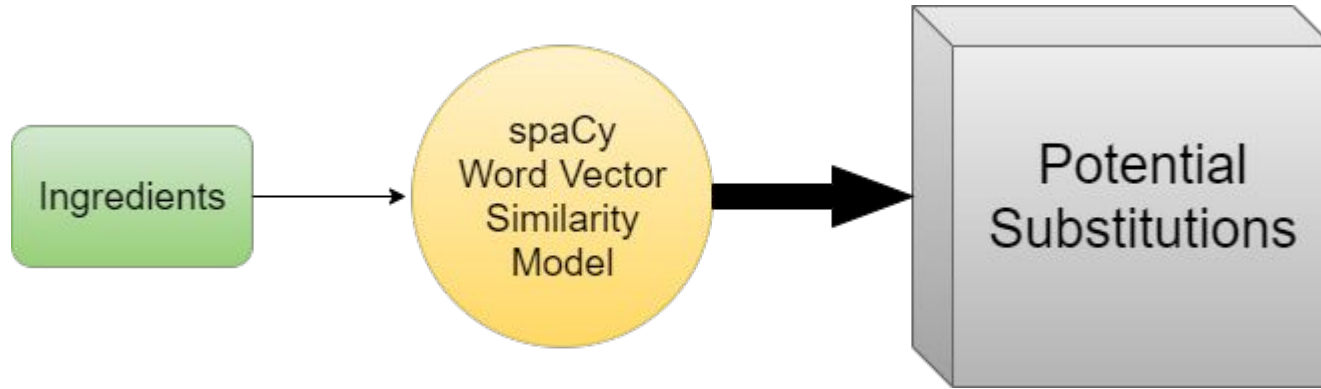


Phase Two



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/leelittlejohn/3ingredients>

<https://www.leelittlejohn.com/>