

A Recipe Recommendation System

by Mike Flanagan

Sate

the recipe book with your taste in mind



About the Dataset

- ❖ **Sourced from Kaggle:**
Shuyang Li, *Food.com Recipes and Interactions* (2019)
- ❖ **Generating Personalized Recipes from Historical User Preferences**
Bodhisattwa Prasad Majumder, Shuyang Li, Jianmo Ni, Julian McAuley
EMNLP, 2019
<https://www.aclweb.org/anthology/D19-1613/>

About the Dataset

❖ Recipes Data:

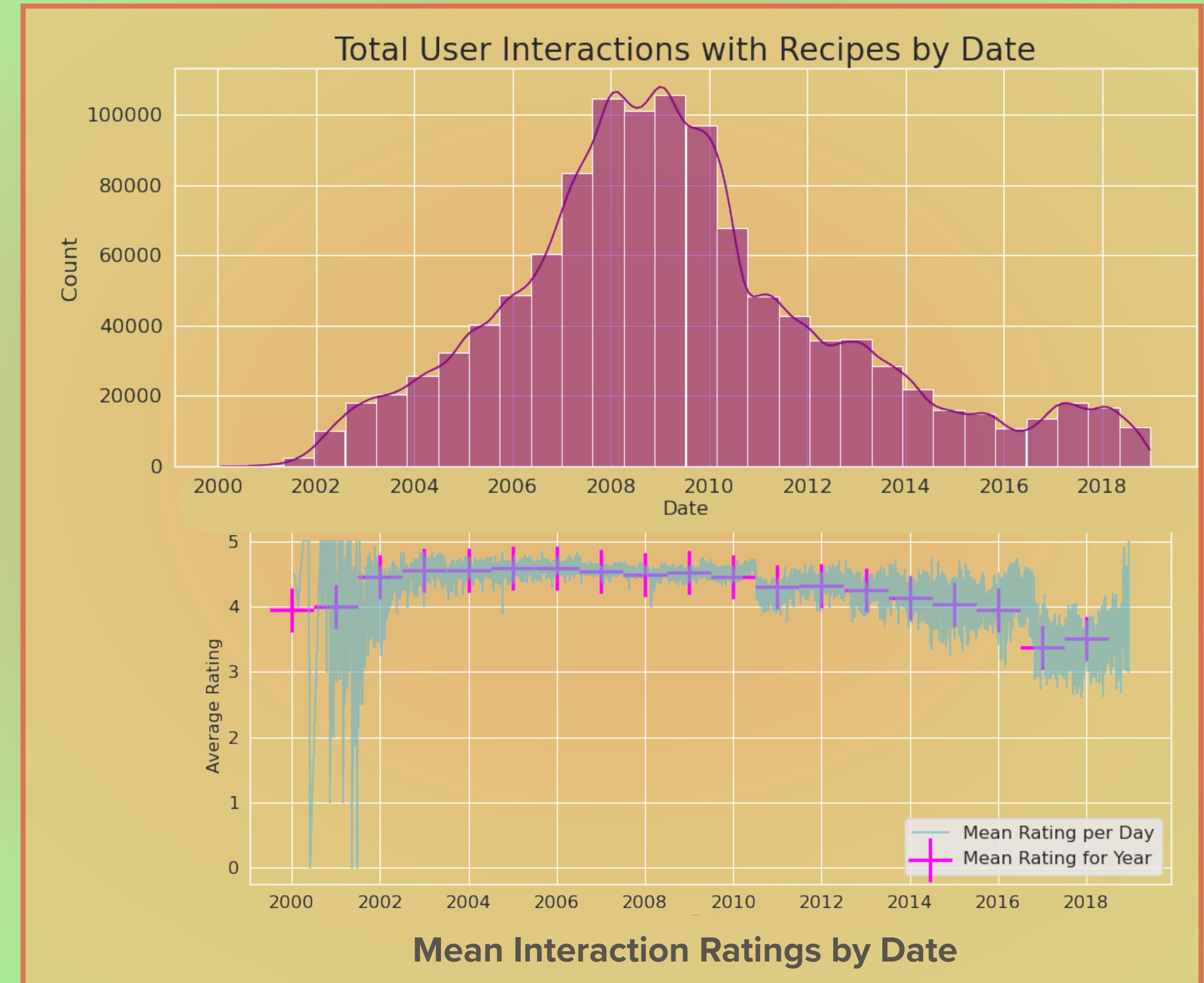
- ❖ **231,636 rows** of recipes
- ❖ Features include:
 - ingredients, time to prepare, steps, nutrition, 3 user reviews, mean rating, many more.

❖ Interactions Data:

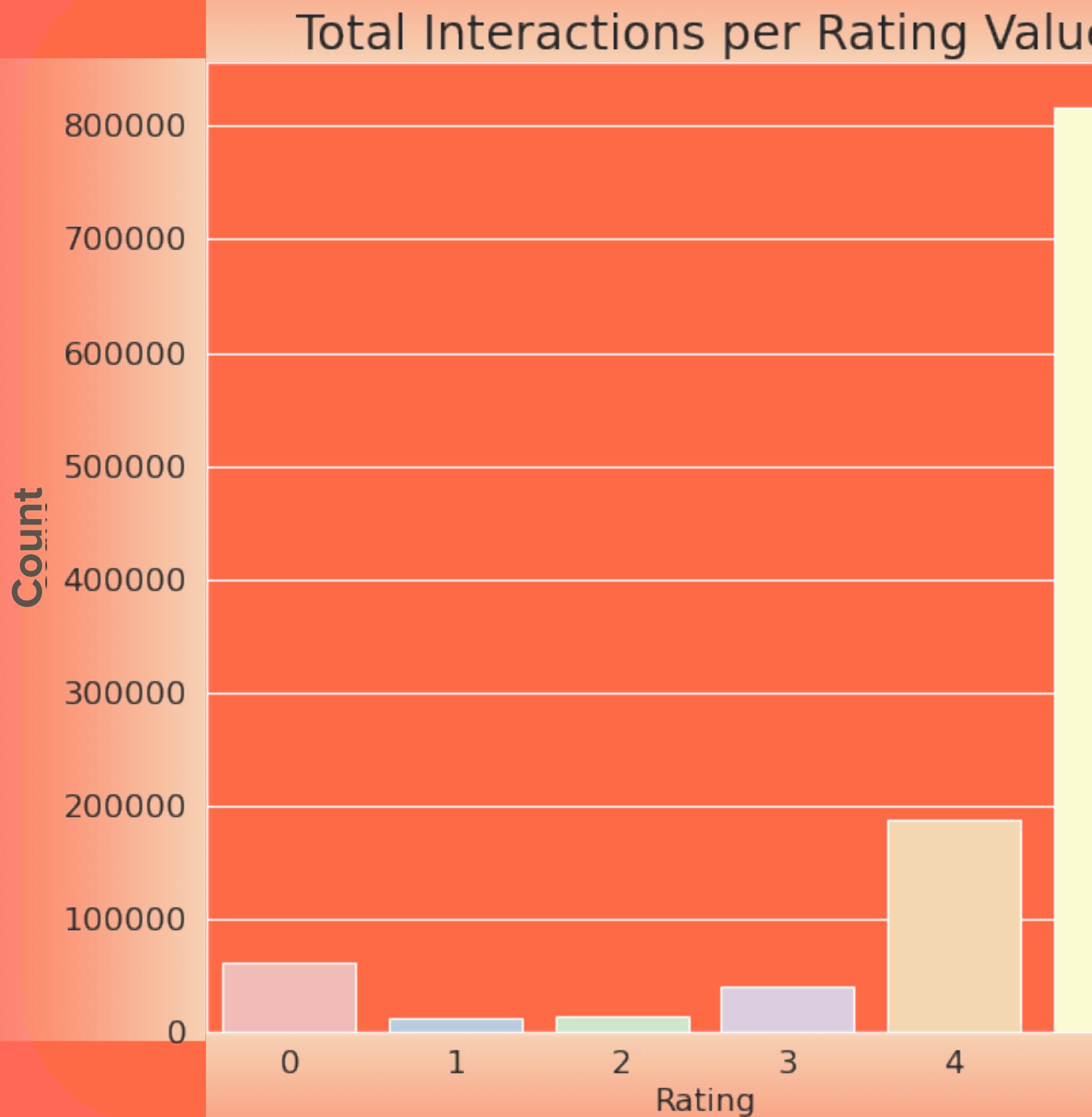
- ❖ **1,132,367 rows** of user interactions with recipes
- ❖ Features include:
 - user ID, recipe ID, date of interaction, rating, & review.

Date

- ❖ **High Variance in Rating Mean by Date in early years**
- ❖ Only **3,012 interactions** first two years
- ❖ Year with most Interactions is **2008**



Ratings

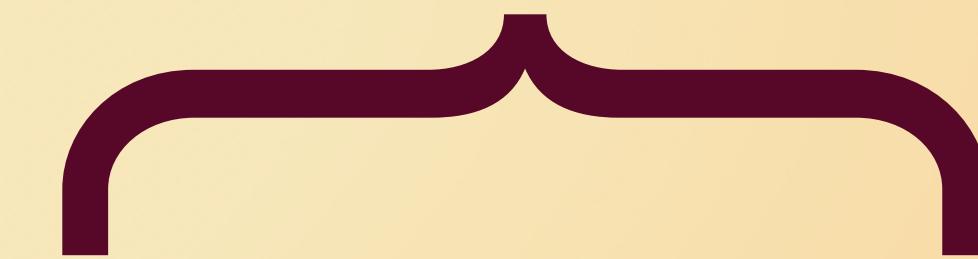


- * **816,229 Five-star Ratings**
- * **60,847 Ratings of 0**
- * **No Null Values**
- * 0 ratings managed by using *Pearson's correlation coefficient* as hyperparameter for model similarity metric.

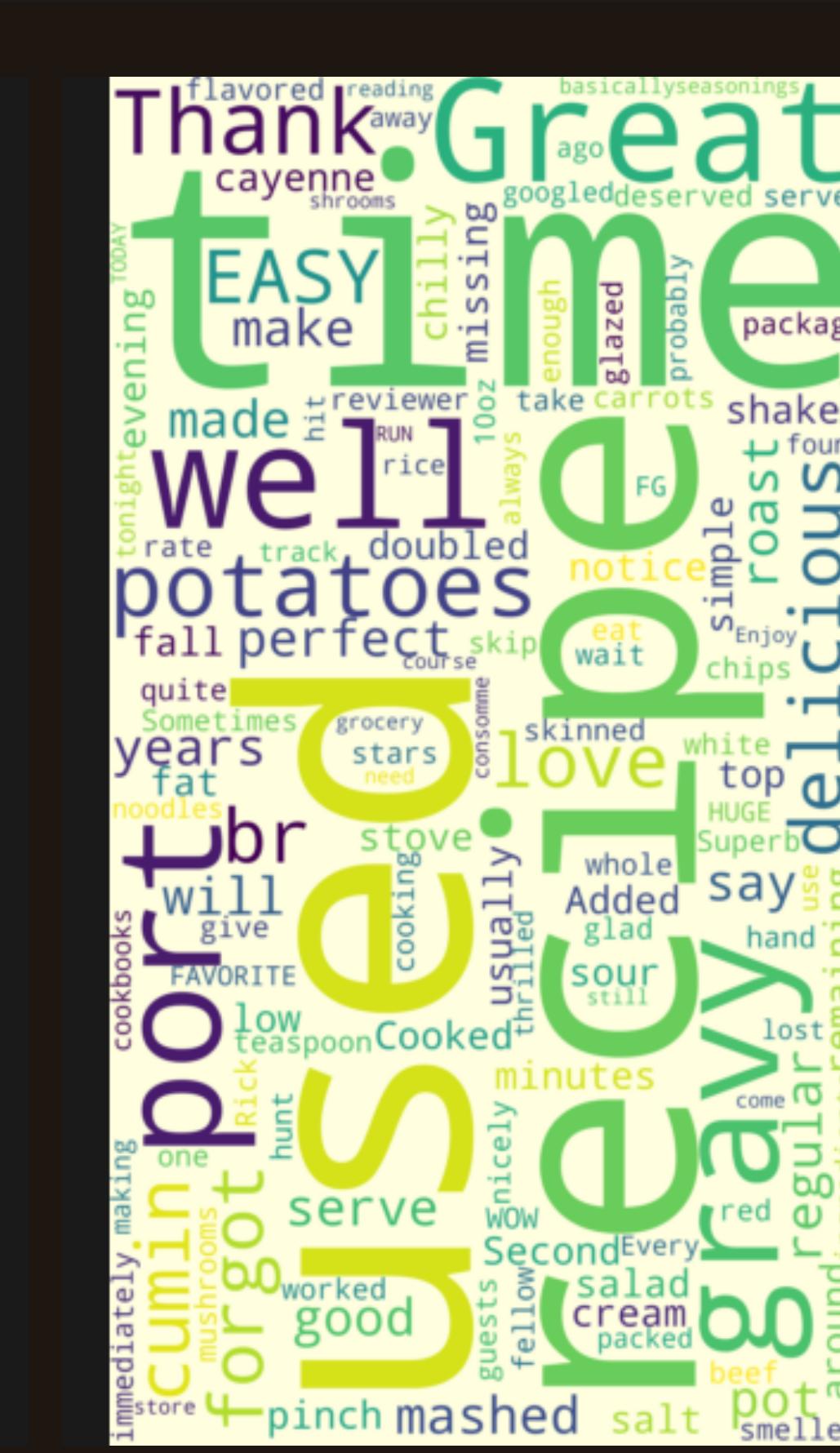
Reviews

- 169 Null Values
 - All user interactions with null review have non-null and non-zero rating

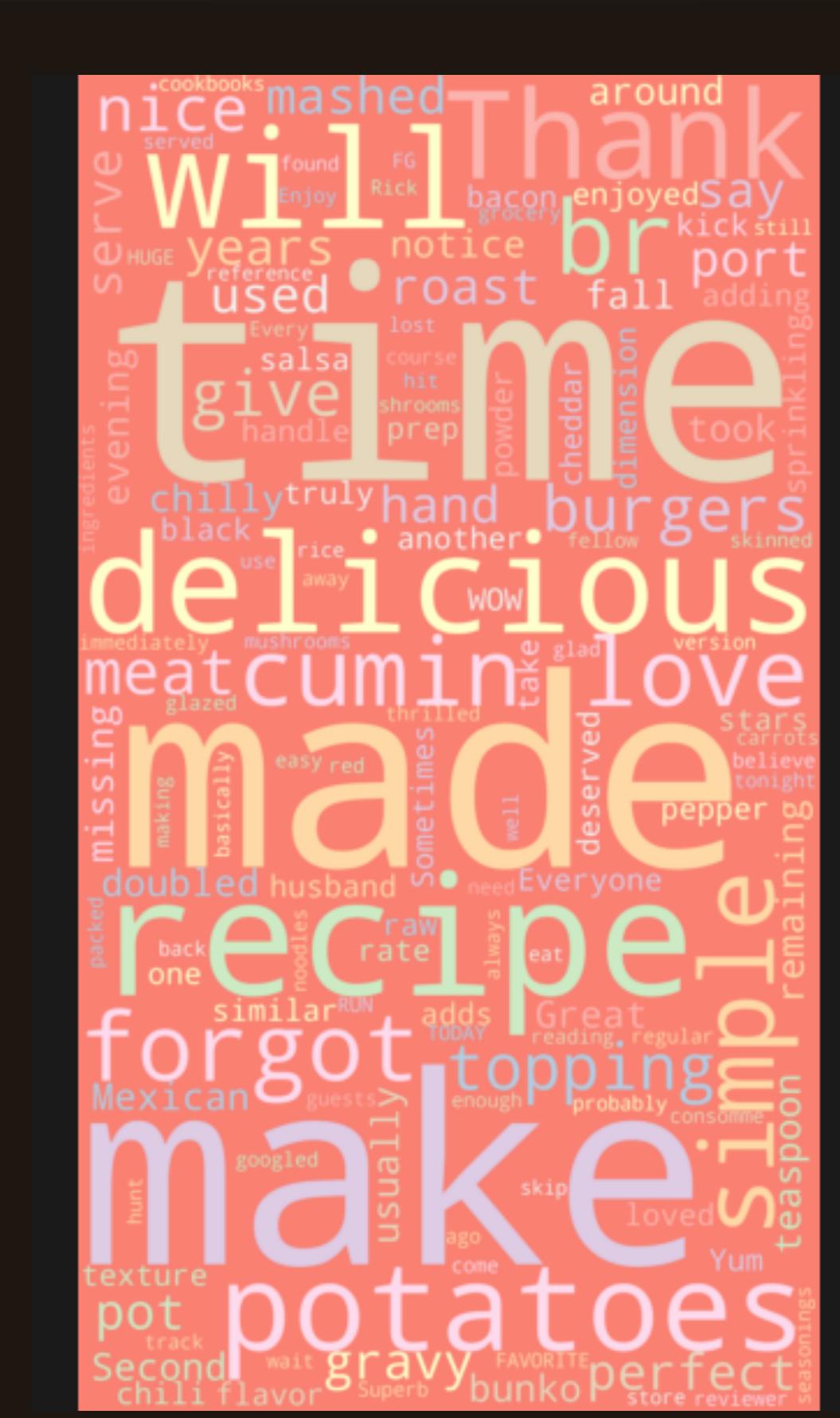
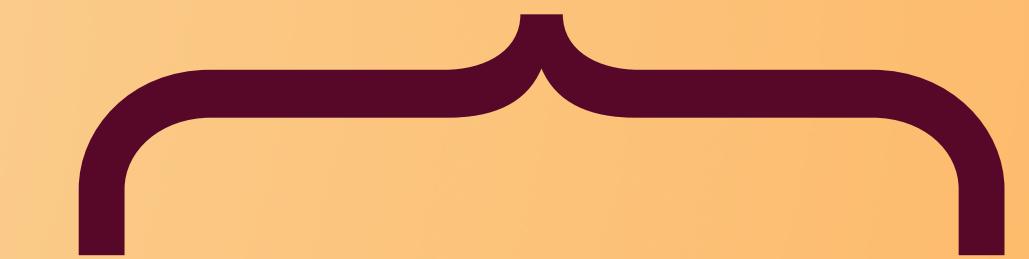
Ratings of 1 & 2



All Reviews



Ratings of 5



Modeling

Evaluating on RMSE with Pearson Correlation used for Similarity Metric

Baseline ALS:

1.2099 RMSE

+Best Train Time

Baseline SGD:

1.2127 RMSE

Tuned Funk's SVD:

1.2142

Co-clustering:

(it was worse)

Demo Preview

Sate

the recipe book for your taste

Pick some things that you like.

soup X



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Further Actions

- ❖ Finalize web app to be operational, polished & accessible.
- ❖ AB Testing
- ❖ Return to modeling

Thank you

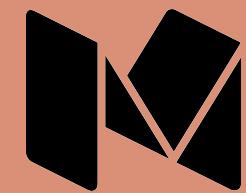


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Data Scientist



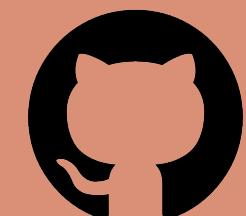
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