

Recipe Recommender System

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iStock™
Credit: poplasen

Business Problem

- Can we provide users with recipe recommendations taking into dietary preferences into account?



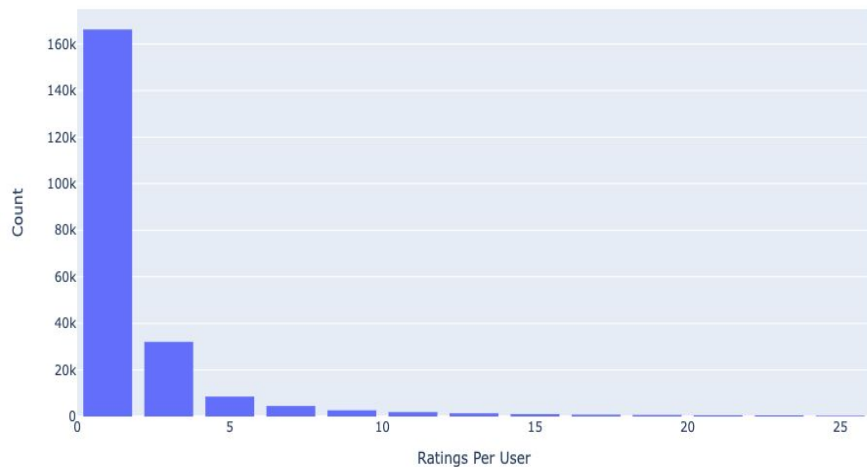
Data Understanding

- User and Recipe data from [Food.com](#)
- Data collected from years [2000-2018](#)



Data Understanding - User Data

Distribution Of Number of Ratings Per User (Clipped at 25)

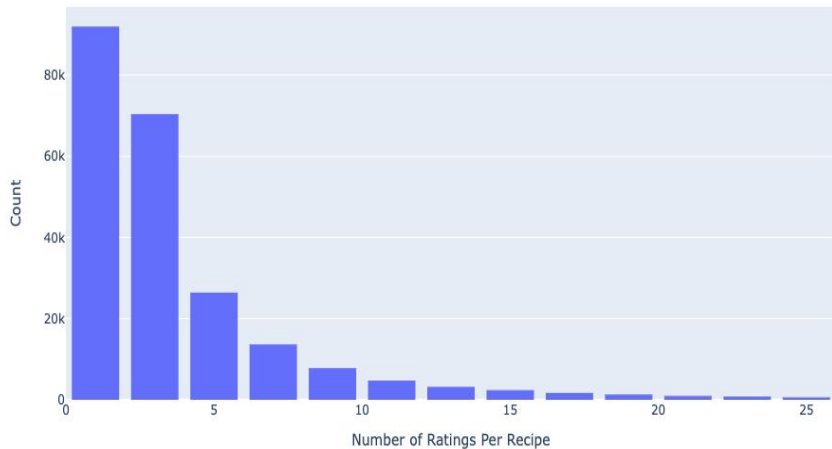


- 226,570 different **users**
- Users rated between 1 and 7,671 recipes

Data Understanding - Recipe Data

- 231,637 different recipes
- Recipes were rated between 1 and 1,613 times

Distribution Of Number of Ratings Per Recipe (Clipped at 25)



Methods - Modeling

- Recommendations based off of **user's similarity to other users**:
 - *“People who liked similar recipes as you, also liked these recipes.”*



Methods - Evaluation

- Accuracy: “How often are the model’s predictions correct?”



- RMSE: compares actual and predicted rating values
-

Results:

- **RMSE:** 1.396
- **Top-100 Retrieval Accuracy:** 0.06%

Example User Results:

- **Top Recommendations for User #38094:**
 - 'Cherry and blueberry trifle'
 - 'Chicken and basil meatballs'
 - 'Chicken and vegetable salad'

```
[110] 1 _, recs = scann({"user_id":tf.constant(["38094"])}))  
      2 print(f"Top recommendations: {np.unique(recs)[:3]}")
```

```
Top recommendations: [b'cherry and blueberry trifle' b'chicken and basil meatballs'  
b'chicken and vegetable salad']
```


Next Steps

- Deploy model
- Update model with new data
- Continue to improve model

- Add more **diet types**



Thank You!

- Any questions?
- Contact:
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