



Seasonings

Recipe Recommender System

Agenda

- 1 Intro
- 2 Demo
- 3 Process
- 4 Results

What's for dinner tonight? 🤔

- Can't decide
- Same repetitive meals
- Give up & order take-out
- Discover personalized content & surface new recipes
- Prepare for grocery runs

Machine Learning Problem

Given a person's preferences in past recipes, could I **predict** other new recipes they might enjoy?

Use Recommender Systems

NETFLIX **amazon**

 **YouTube**

Data

1100

Recipes

allrecipes!

460

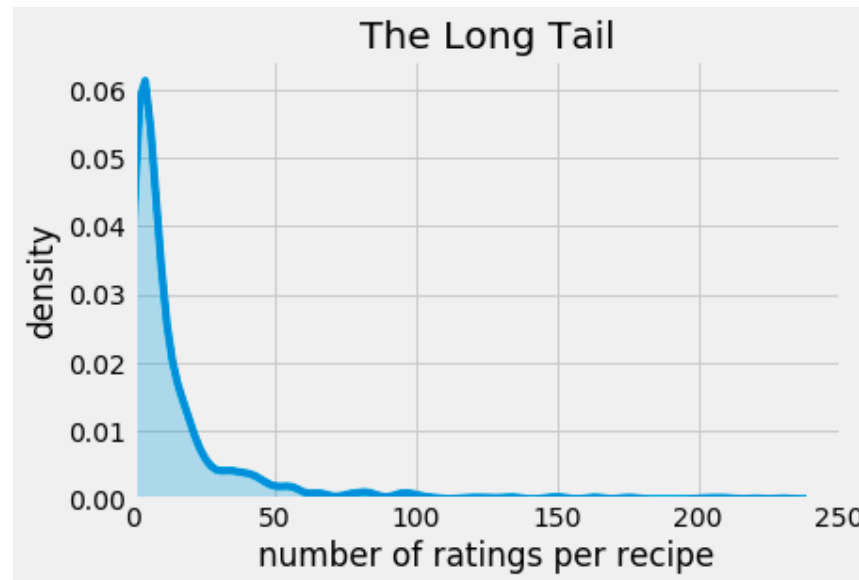
Cuisines

55K

Users

73K

Ratings

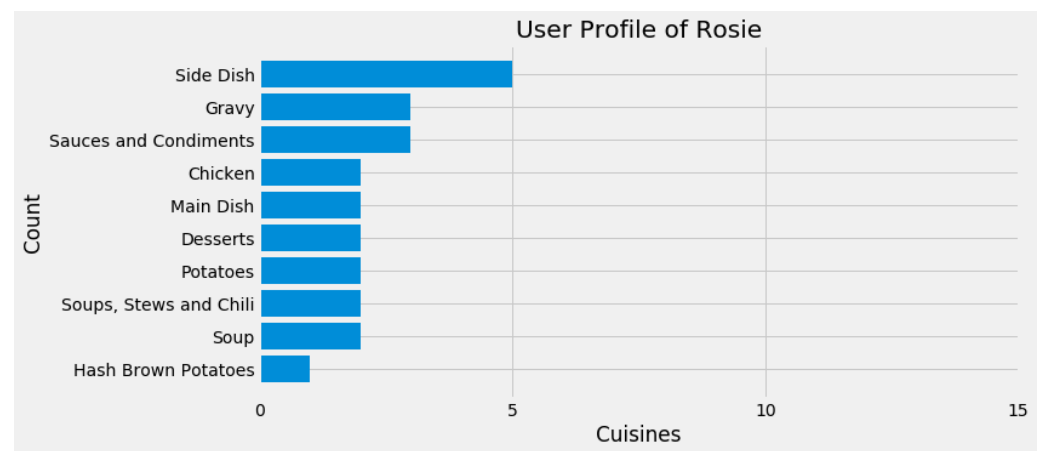
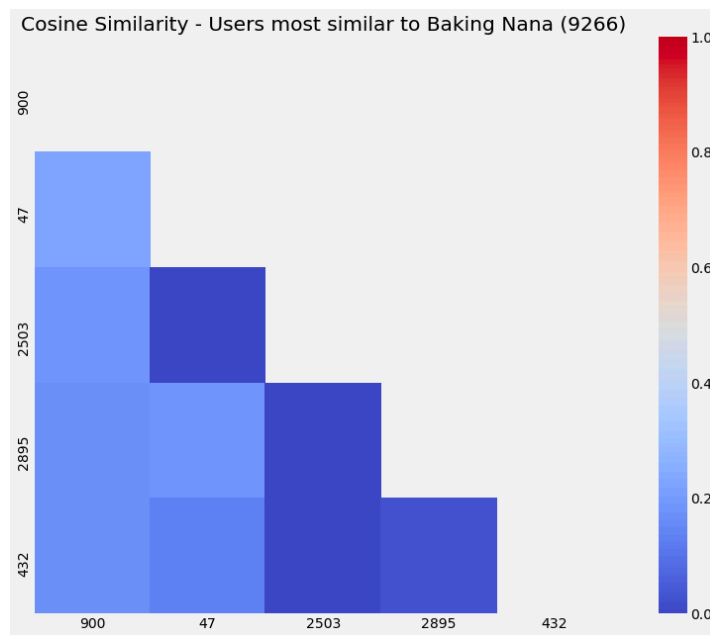


02

Live Demo

1A Collaborative Filtering

Cosine Similarity



1B Content Based Filtering

Solves cold start problem

But ... curse of dimensionality

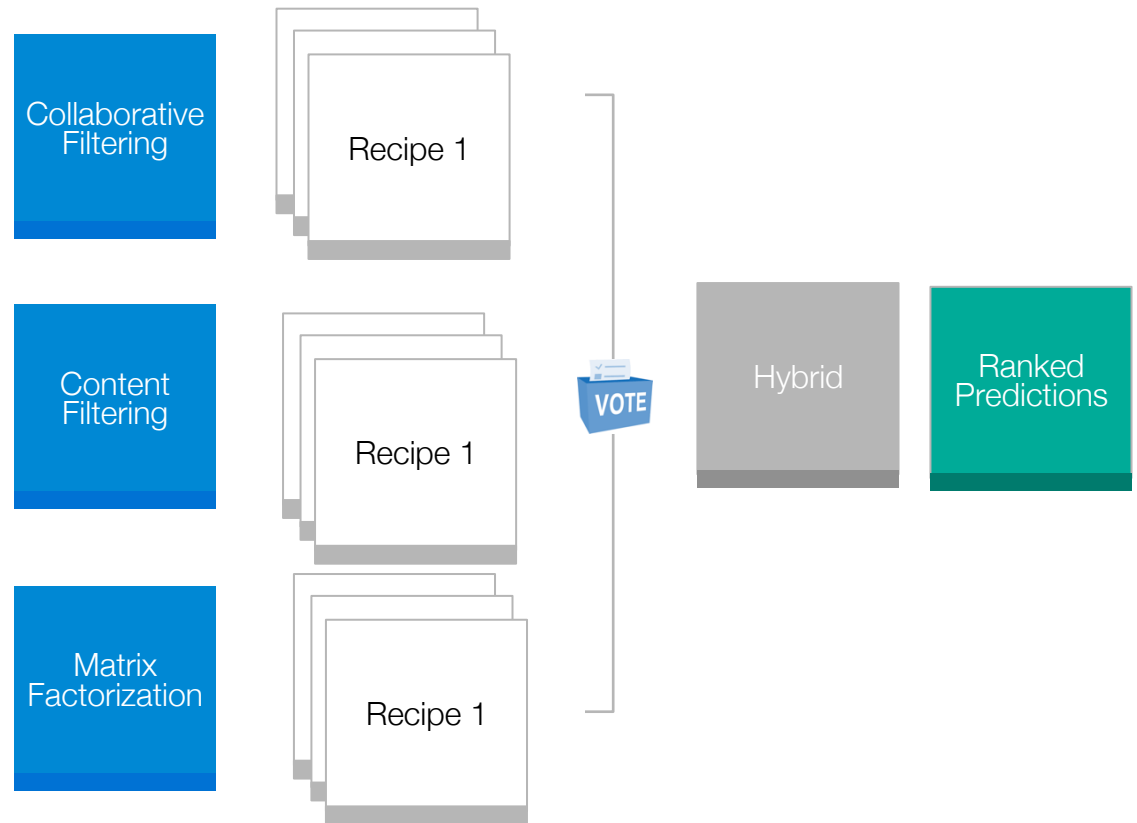
2 Matrix Factorization

Dimensionality reduction to
predict ratings with latent factors

1000 \rightarrow 100 components
explains 55% of variance

Better than the
sum of its parts

A hybrid model



Model Evaluation

	Naïve Model	1. User-Based	2. Item-Based	3. Factorization
Test RMSE	4.6	n/a	n/a	0.30
Precision at 6	0%	33%	17%	80%
Recall at 6	0%	3%	2%	4%

What fraction of recommended items did user consumed?

“Out of all items the user consumed, what was recommended?”

Thanks! That's a wrap.



I really hope this inspires you
to try something new.

Challenges

- More compute 🐌
- No Public API 😭

Version 2.0

- NLP on user reviews & topic modeling
- More user testing