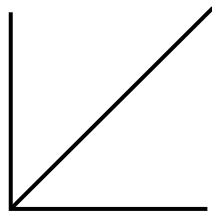


Meeple Matchmaker

November 15, 2024





Hello!

My name is **Miles Cumiskey.**

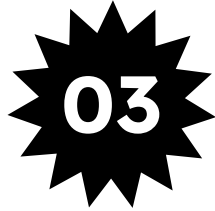
I play **a lot** of board games.



Table of contents



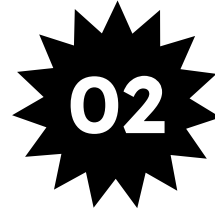
The Problem



Data Insights



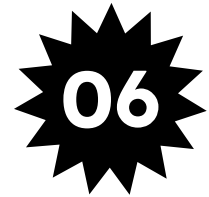
Evaluating



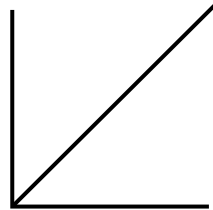
**Board Game
Geek**



**Making
Recommendations**



Further Steps



The Problem



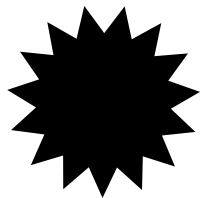
There are **too** **many** games!



What should I try? What should I buy? What should I bring to board game night?

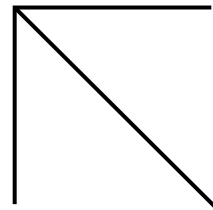


I need:



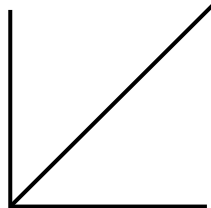
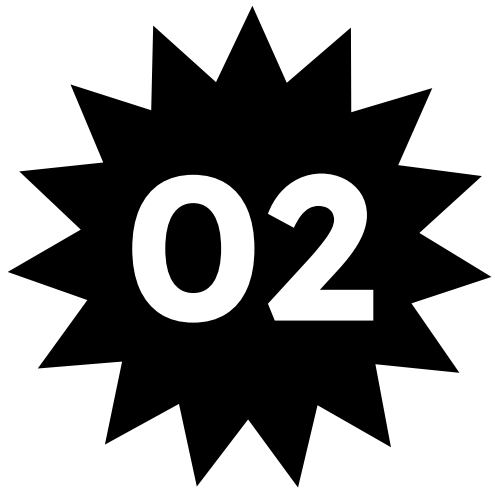
Personalized
Recommendations

That can show me
new and **upcoming**
games





**Since I rated Wingspan
as 10, I might rate
Everdell as 8**



**What games
are out there?**

▼ QUICKBAR



Add shortcuts to your favorite games, designers, forums, or any other page within the Geek.

Add Current Page

▼ RECENTLY VIEWED

Shogun
Push a Monster
Giant UNO
World Order
Lupus in Tabula
The Man from U.N.C.L.E.
Soccer
Expedition
Heart of Oak: Naval Miniatures Rules for the Age of Fighting Sail
Arcs
See All »

▼ THE HOTNESS

GAMES ▾

- Avalon: The Riven Veil** 2025
- World Order** 2025
- Ethnos** 2017
- Arcs** 2024
- Grinivil** 2025
- SETI: Search for...**

We may earn a commission when you buy through our links.

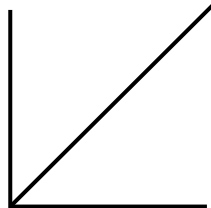
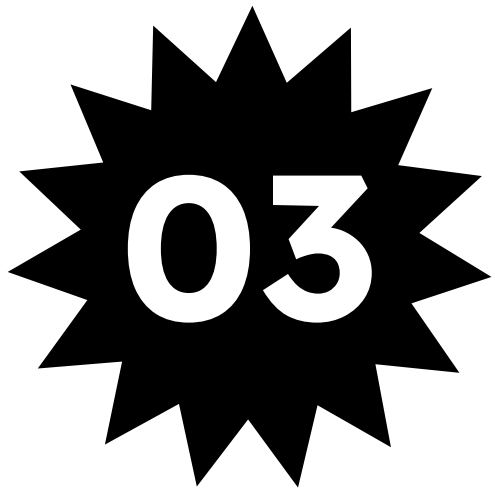
1, 2, 3, 4, 5 Next » [1598]

Board Game Rank		Title	Your Rating	Geek Rating	Avg Rating	Num Voters	Status	Your Plays	Shop
564		CATAN (1995) Collect and trade resources to build up the island of Catan in this modern classic.	4 Nov 2024	6.917	7.10	130375	Prev. Owned		List: \$54.99 Amazon: \$43.97
231		Carcassonne (2000) Shape the medieval landscape of France, claiming cities, monasteries and farms.	N/A	7.296	7.41	129445			List: \$41.99 Amazon: \$34.99
153		Pandemic (2008) Your team of experts must prevent the world from succumbing to a viral pandemic.	N/A	7.424	7.53	127504			List: \$44.99 Amazon: \$33.46
94		7 Wonders (2010) Draft cards to develop your ancient civilization and build its Wonder of the World.	N/A	7.568	7.68	106282			List: \$59.99 Amazon: \$38.10
7		Terraforming Mars (2016) Compete with rival CEOs to make Mars habitable and build your corporate empire.	N/A	8.207	8.35	101947			Amazon: \$79.99
19		7 Wonders Duel (2015) Science? Military? What will you build?							List: \$34.99 Amazon: \$21.99
31		Wingspan (2019) Attract a beautiful and diverse bird to your farm.							List: \$65.00 Amazon: \$52.00
146		Codenames (2015) Give your team clever one-word clues to identify their teammates.							List: \$24.99 Amazon: \$19.94
80		Azul (2017) Place tiles to create a beautiful city in the desert.							List: \$39.99

... at least 125,600

Board Game Geek

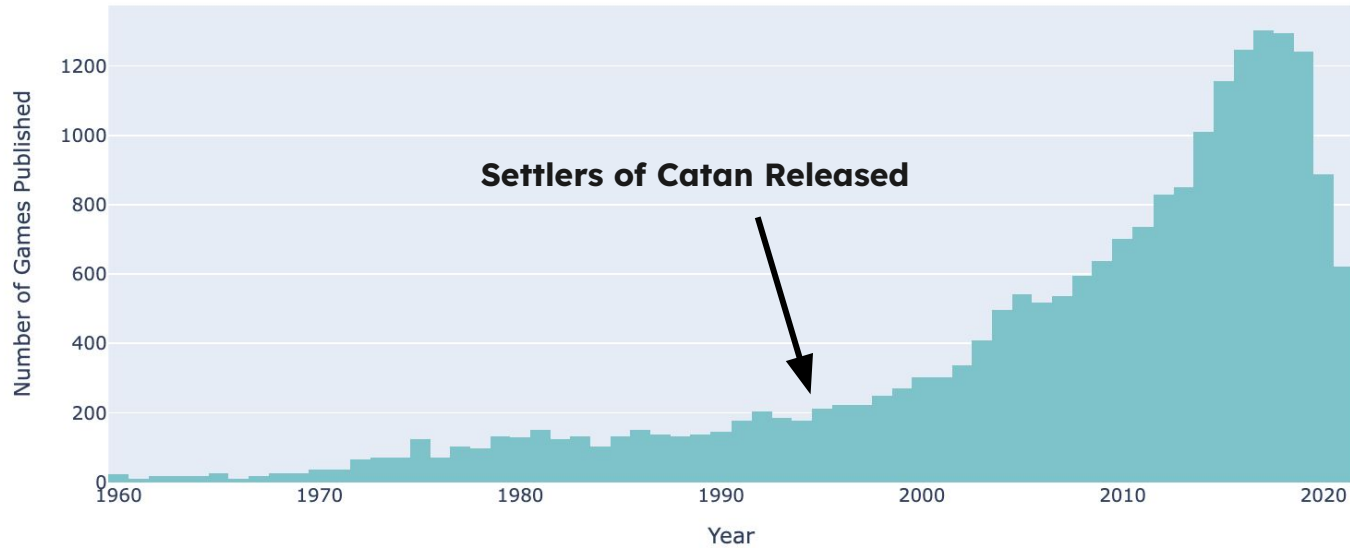
- Provides a **game database**, including description, rules, ratings, complexity, and reviews
- TONS of information for each game
- Every game must have a **minimum of 30 ratings** before it can be pulled via the API
- I already have an account :D



Examining Games



Games Over Time



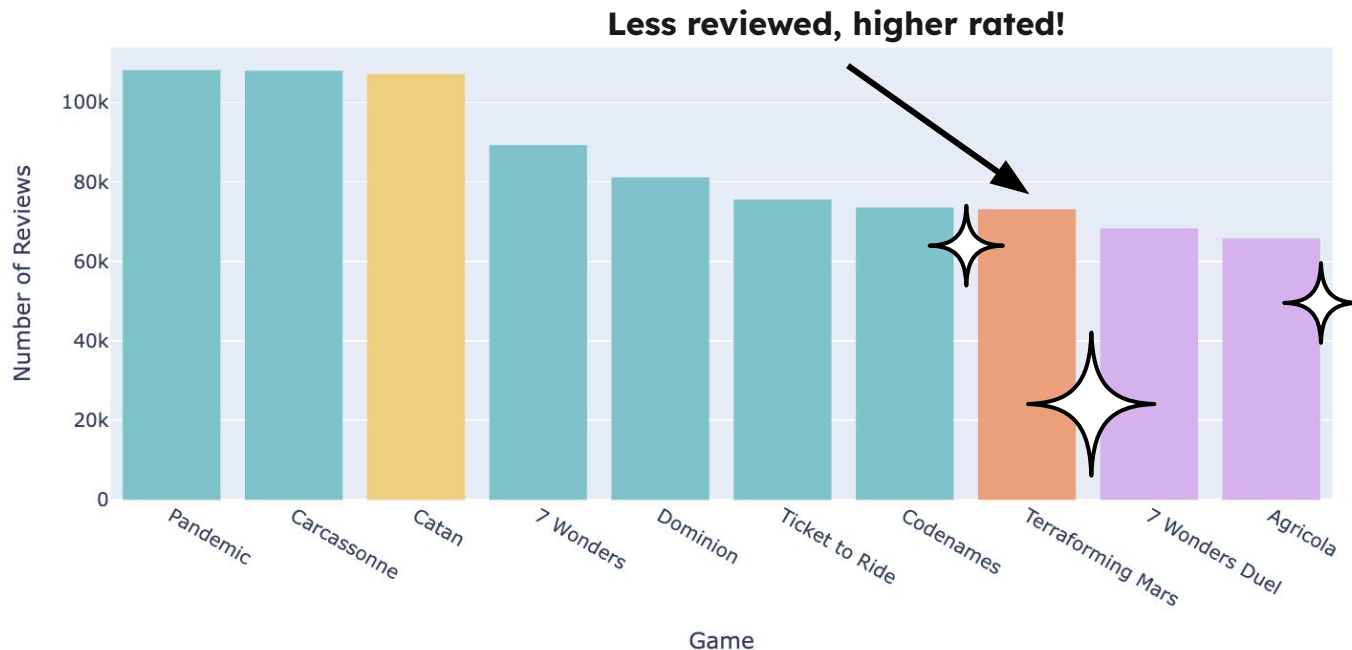
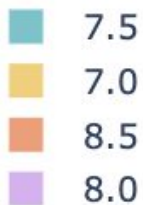
Rating Scale

- **10 - Outstanding**. Always want to play and expect this will never change.
- 9 - Excellent game. Always want to play it.
- 8 - Very good game. I like to play. Probably I'll suggest it and will never turn down a game.
- 7 - **Good game**, usually willing to play.
- 6 - Ok game, some fun or challenge at least, will play sporadically if in the right mood.
- **5 - Average game**, slightly boring, take it or leave it.
- 4 - Not so good, it doesn't get me but could be talked into it on occasion.
- 3 - Likely won't play this again although could be convinced. Bad.
- 2 - Extremely annoying game, won't play this ever again.
- **1 - Defies description of a game**. You won't catch me dead playing this. Clearly broken.

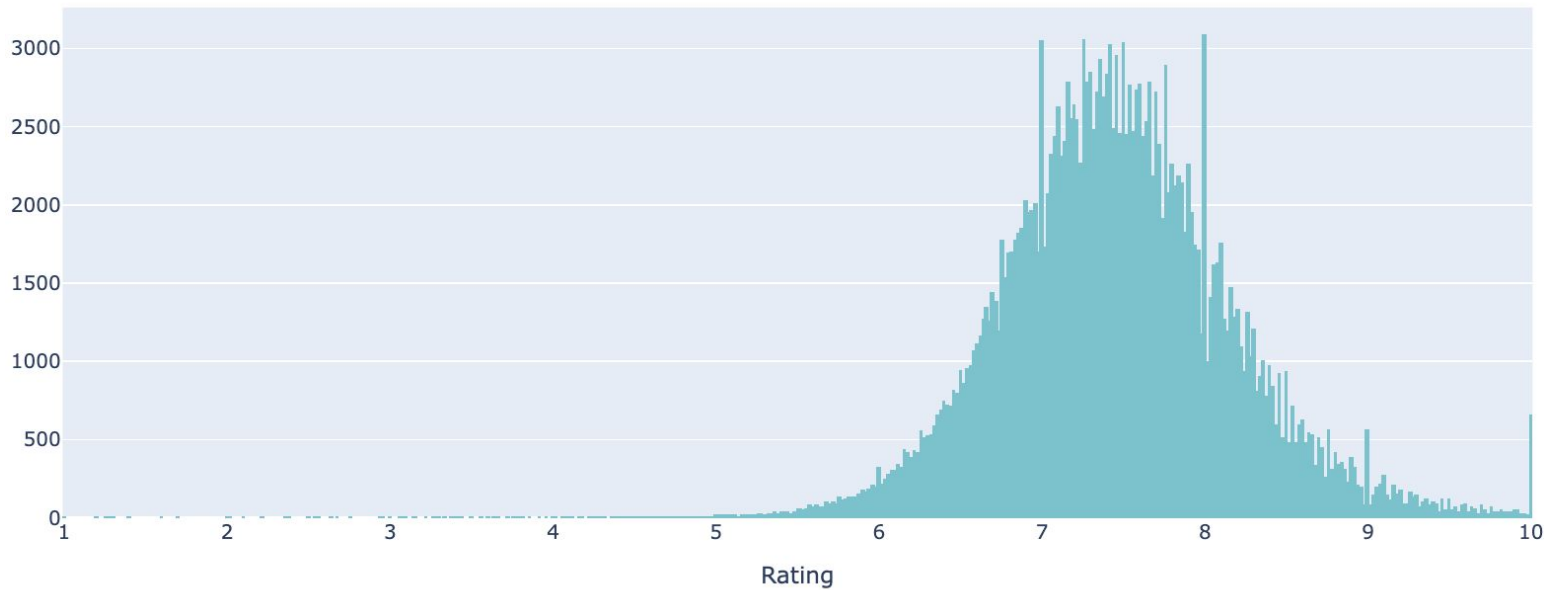


Most reviews \neq Most Popular

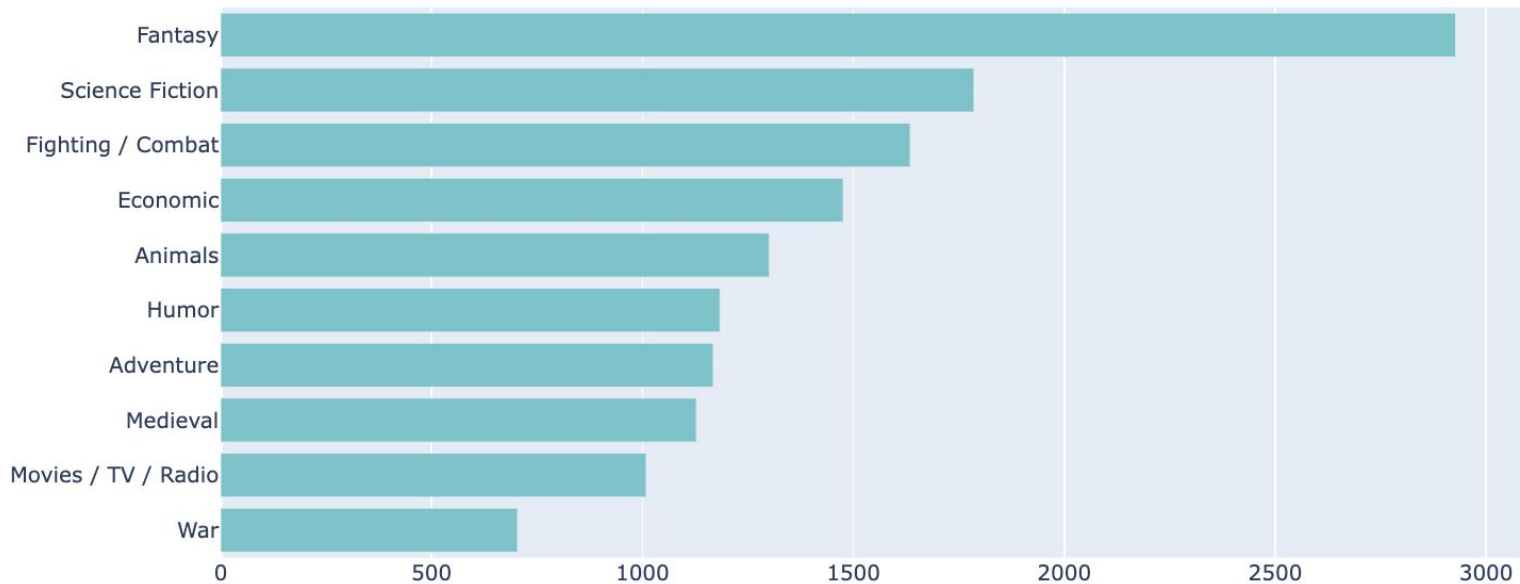
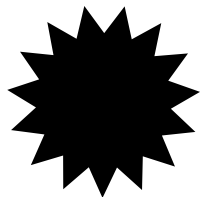
Rounded_Rating



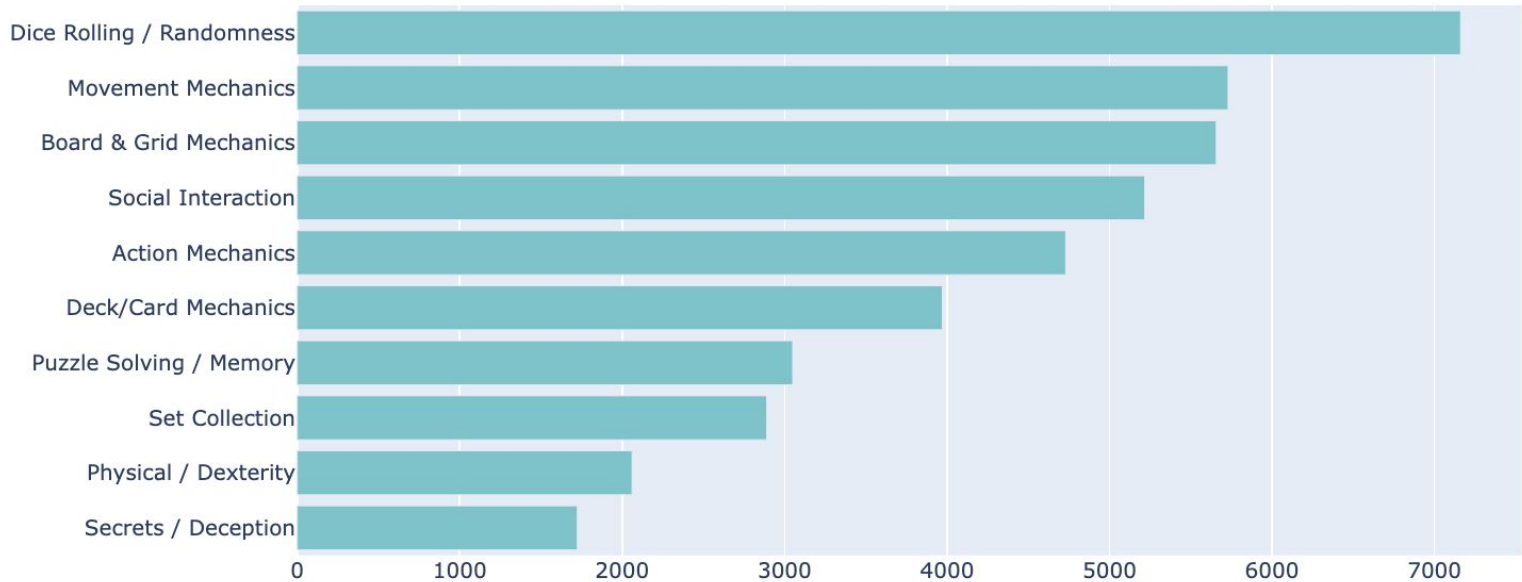
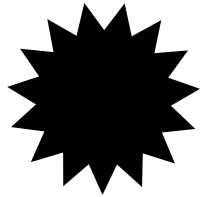
Rating Distributions

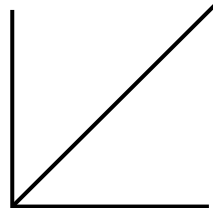


Themes



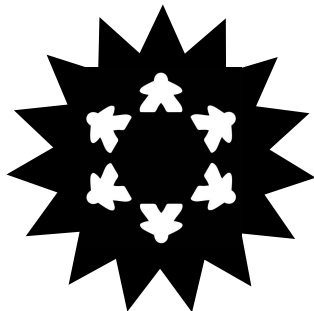
Mechanics





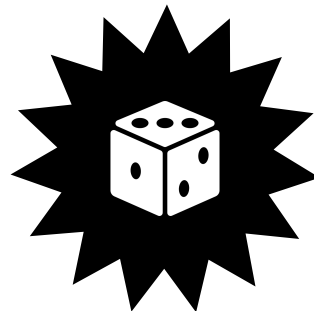
Making Recommendations

Two Primary Methods



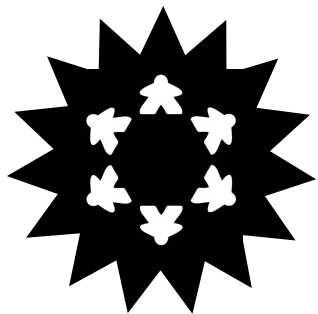
Collaborative

Focus on **User** Reviews, and
recommend products that
similar users enjoy



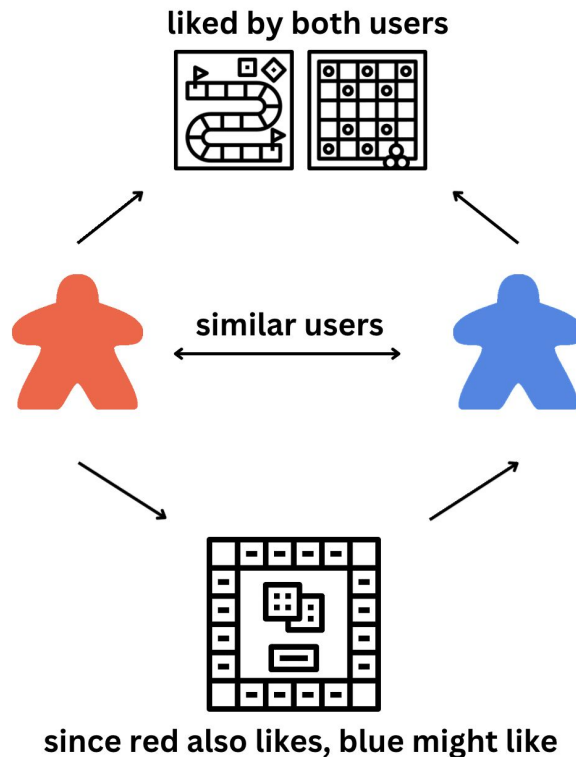
Item-Based

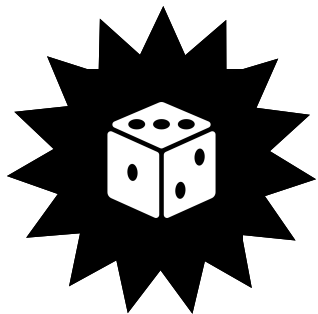
Examine **Item** Features and
recommend similar products



Collaborative Filtering

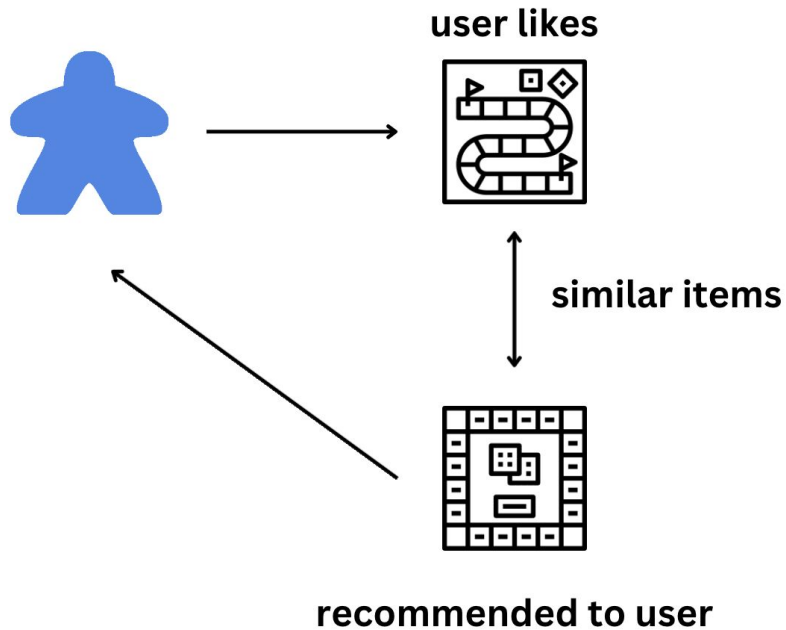
Fast and space-efficient, but
will not recommend products
with no reviews (new products)





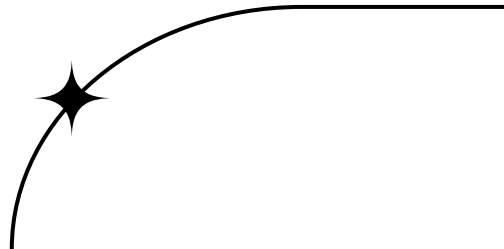
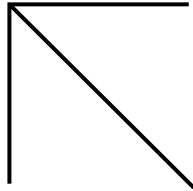
Collaborative Filtering

Can recommend new products, but takes up more space and can be slow

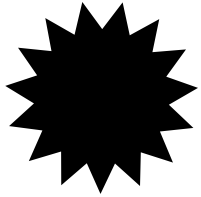




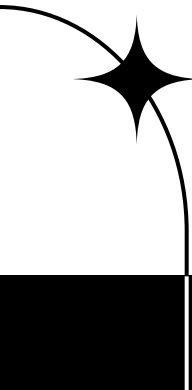
**WE CAN
USE BOTH!**

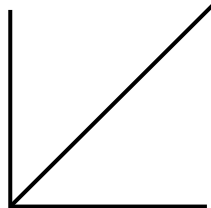


How Hybrid Works:

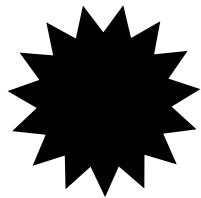


- Determine a **Weight** for each algorithm
- Make a prediction for a user and a game using item-based and collaborative filtering
- Return **Weighted Average** of the two Algorithms





Evaluating The Results



RMSE is a way to measure how far off the recommendations system's predictions are from actual ratings that users gave.

It's a way to check how accurate the predictions are!

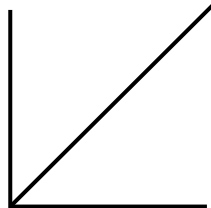
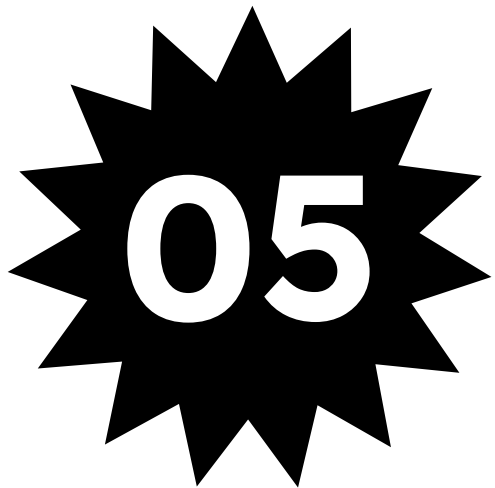


RMSE

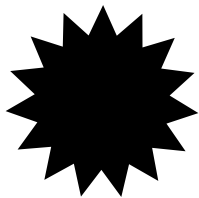
1.05

on average, **the hybrid system** recommendations are about **1.05 points** away from the **actual ratings** given by users.

ie : system predicts I would rate Everdell as an **8**, but I would actually rate it as **9**



Further Steps



Use a Neural Net

Examine all the features!!!

Expand to make group recommendations

Find the best game for game night

Build system for other personas

Older games, board game beginners



Thanks!

Any questions?

mcumiskey.github.io

CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon** and infographics & images by **Freepik**

