

1. Name
2. "What Is It?"
  - a. Start with Picture of different types
  - b. Fade to words
  - c. What it boils down to is How do recommender systems work? It comes down to understanding people. A recommender system starts with some information about a person that it uses to figure out his/her individual tastes and interests. Then, it merges its data about him/her, with the collective behavior of everyone else like him/her, to recommend stuff a person might like.
  - d. Word box: Information about people or items are used to recommend other items to consume
3. "Common Types"
  - a. Just quick read whatever
4. "Who Cares?"
  - a. Say, "What does it matter to you? Who cares about recommendation systems"
5. "Revenue"
  - a. Subscriptions: Netflix - done by bringing movies and shows a user will love.
  - b. Ads: Google - most of revenue is by ads. Look at at Youtube. Longer ads tend to be in more popular videos. Can sell "adspace" like Real Estate (Example of SuperBowl). Facebook: targeted ads.
  - c. Company Interests - Can recommend items, sponsored or promoted by the company, tailored to the customer. Example is Amazon Basics brand.
  - d. Say, "Next, Let me show you an example of how a recommender system I made."
6. "MovieLens"
  - a. 100k ratings, over 600 users, for over 9700 movies
  - b. Picture of most genres
7. "Top 'N' Recommender"
  - a. Most common - spotify, Google, etc.
  - b. It's a list
  - c. Higher items are more important than lower items
  - d. Say, "Actual movie recommendations using deep learning."
8. "Metrics"
  - a. Recommenders are evaluated using 8 quantitative metrics used holistically to evaluate the recommender
  - b. 2 for accuracy - RMSE
  - c. 3 that are user focused - hit rates
  - d. 3 that are systemic - coverage, novelty, diversity
9. "Qualitative"
  - a. Apart from the 8 quantitative metrics, I used a qualitative metric as well.
  - b. Each recommender prints out top 10 recommendations.
  - c. These recommendations are based on a specific user who's part of the dataset
  - d. Here is a list of the top movies User 25 rated.
  - e. Qualitative because list is similar to what I like so that helps to round out the hard quantitative metric
  - f. Say, "Let's look at the different recommendations I would use for my own version of Netflix."
10. "Content-based recommender"
  - a. Essentially, it recommends like items based on the attributes of the item itself.
  - b. Examples include genre and release year
  - c. I would use this algorithm for a "popular" movie category
11. "Machine Learning 1"
  - a. User-Item pairs matrix - Users are on the left side, items are along the top

- b. It is this relationship that machine learning uses to find patterns and spooky good recommendations

## 12. "Machine Learning 2"

- a. User-Items
- b. Hidden Patterns (latent features)
- c. Proven technique - this particular algorithm is part of what won the Netflix prize
- d. I would use this one for watch history, my interests, saved list, etc. essentially looking at data about me.

## 13. "Long Tail"

- a. Next recommendation system is "Random," not pure Random but a tailored Random. This helps us with the business problem known as the "Long Tail."
- b. Think of it akin to the 80/20 rule where the top 20 percent of items make up the top 80 percent of sales.
- c. However, the "long tail" represents niche movies like anime, foreign films, independent movies, etc. Taken together, the "long tail" has the potential to help users find new movies they normally wouldn't see. This keeps them engaged to the platform which helps revenue

## 14. Random

- a. Gives opportunity for users to find new movie they love. Planting seeds for new niche topics or undiscovered interests

## 15. "Conclusion"

- a. Proven techniques - google, spotify, facebook
- b. Give the users the content they will love both based on the attributes of themselves or items they already like, and also help users find new content, topics, passions they never existed
- c. All of this just helps revenue. Happy customers, better engagement, ads, and ultimately control of what items to promote to users