Recommendation System

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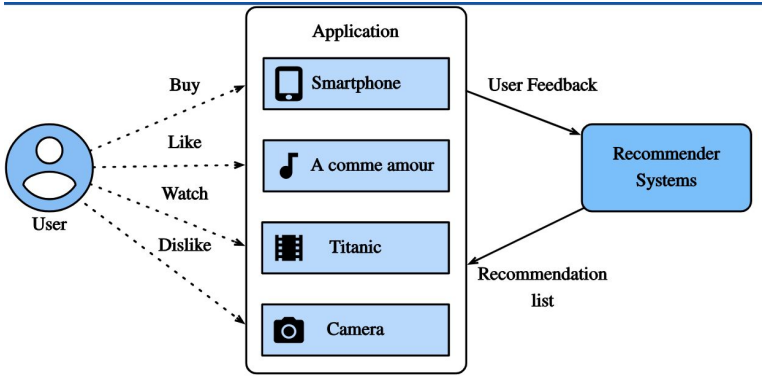
Recommendation System

- A recommendation system (or recommender system) is a class of machine learning that uses data to help predict, narrow down, and find what people are looking for among an exponentially growing number of options.



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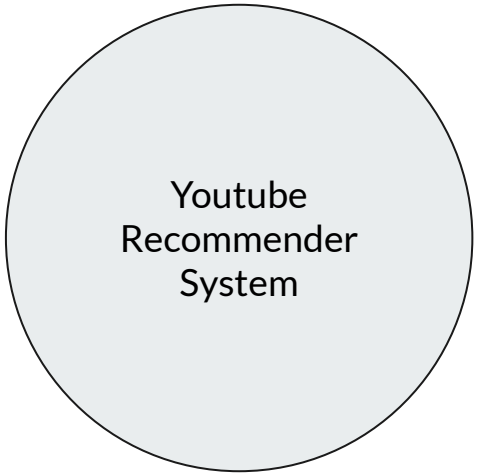
Shorts

Terminology

- **Items:** The entities a system recommends.
  - For youtube: videos are items
  - For play store, apps are items
- **Query:** The information a system uses to make recommendation
  - User Information
    - User id
    - Items that users previously interacted with
  - additional context
    - time of day
    - the user's device

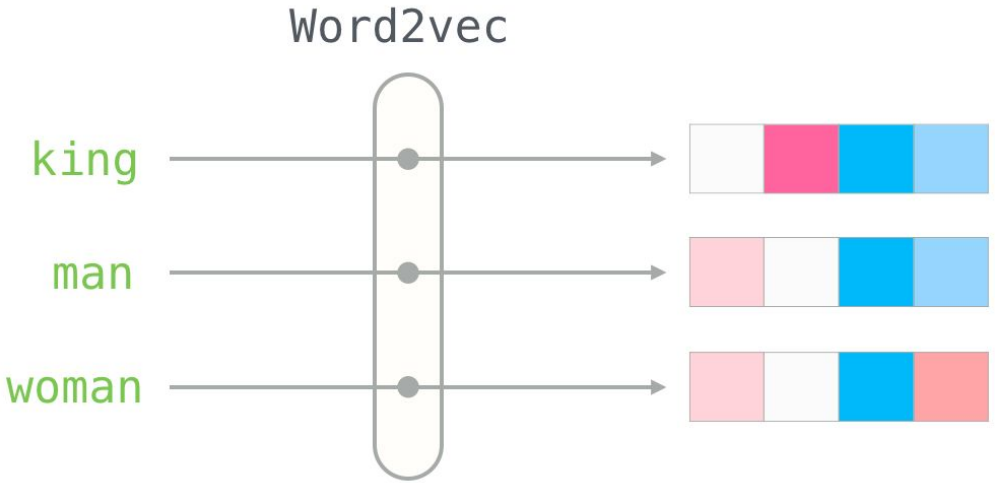
Youtube Recommender System

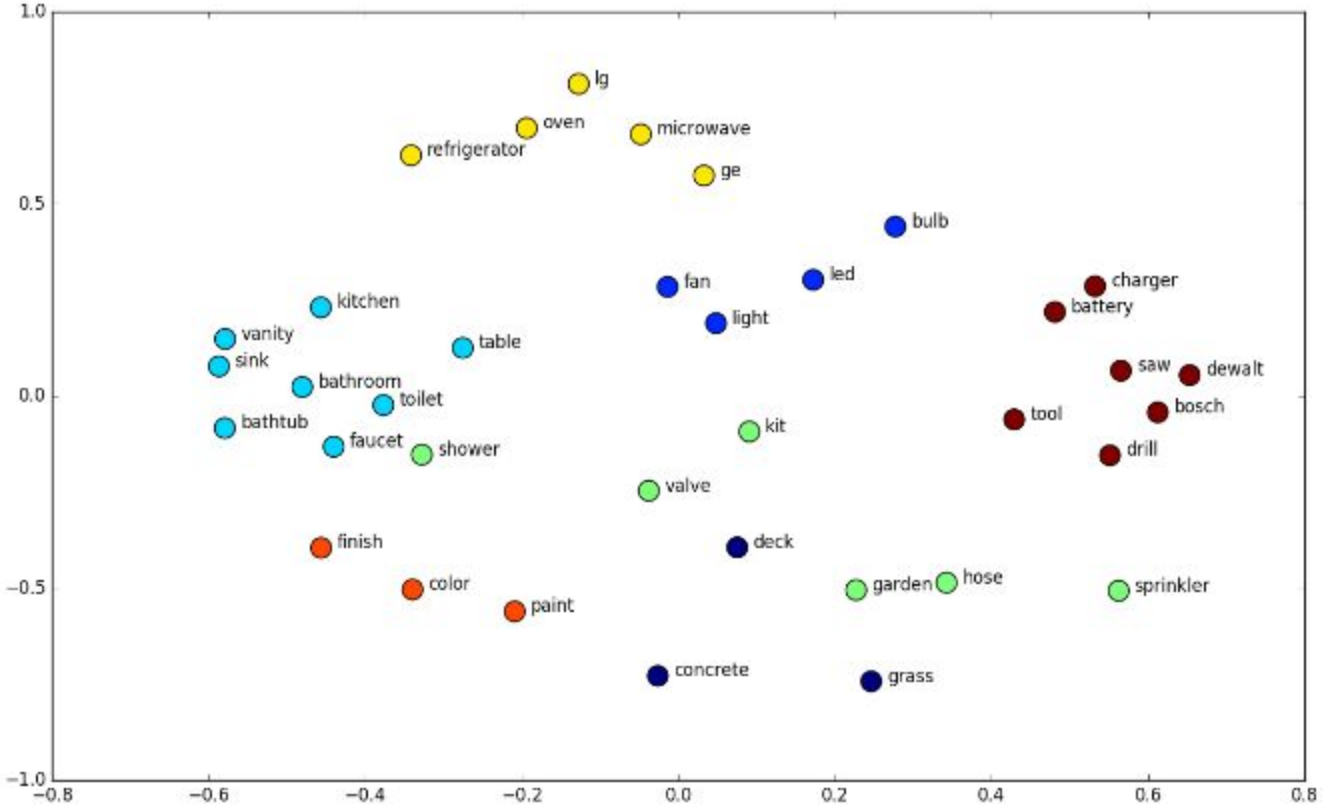


Youtube Recommender System

Embedding

- Mapping from a discrete set to a vector space

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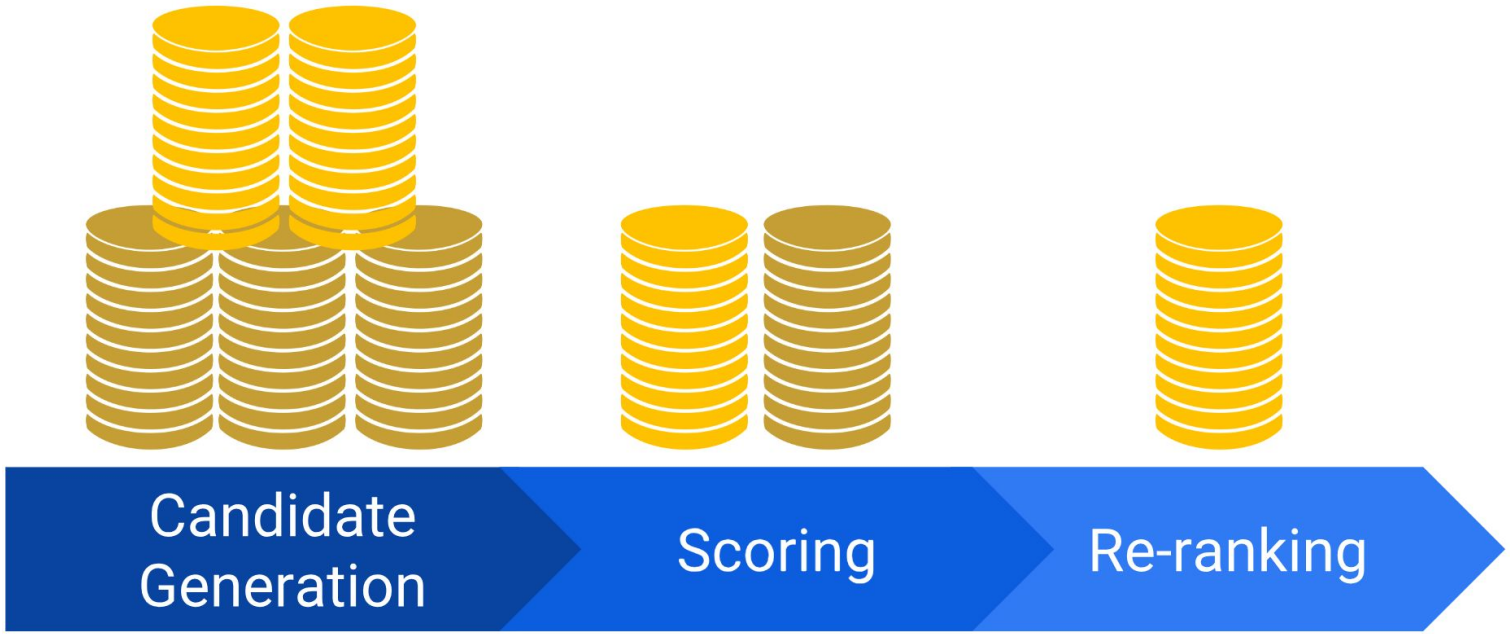
Recommendation Systems Architecture Overview



Candidate Generation

- The system starts from a potentially huge corpus and generates a much smaller subset of candidates.
- A given model may provide multiple candidate generators, each nominating a different a subset of candidates.

Scoring

- This model scores and ranks the candidates in order to select the set of items (on the order of 10) to display to the user.

Re-ranking

- The system must take into account additional constraints for the final ranking.
- The system removes items that the user explicitly disliked or boosts the score of fresher content.

References

- https://developers.google.com/machine-learning/recommendation
- https://jalammar.github.io/illustrated-word2vec/
- https://neptune.ai/blog/word-embeddings-guide