

IS 643 – Project 3

The goal of this assignment is give you practice working with Singular Value Decomposition.

Your task is implement a matrix factorization method—such as singular value decomposition (SVD) or Alternating Least Squares (ALS)—in the context of a recommender system.

You may approach this in a large number of ways. You are welcome to start with an existing recommender system written by yourself or someone else (always citing your sources, so that you can be graded on what you added, not what you found).

Here is one example. Suppose you start with (or create) a collaborative filtering system against (a subset of) the MovieLens database or our toy dataset. You could create a content-based system, where you populate your item profiles by pulling text information for specific movies from a source like imdb, applying text processing techniques (like TF-IDF), then using SVD and topic modeling to create a set of features derived from the text.

An extra intermediate step could be to take text that was pre-classified, e.g. “fighting” or “singing” and build out two “explainable” features. SVD builds features that may or may not map neatly to movie genres or news topics.

You may work in a small group (2 or 3 people) on this assignment.