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Midway Report

Context Based Music Recommendation

The problem that we want to solve is recommending Music to a user based on the context they are in. This will be done by a nearest neighbor approach. The dataset is an excel sheet that shows what user rated what item (song) in what context (landscape, mood, time of day, traffic, weather). There are 9 context dimensions that will be considered. A user can rate the same item in different contexts. There also exists data with no context given. The dataset also has some data that is currently irrelevant like song name and album. The data set consists of 42 users, 140 songs, with 4012 ratings.

We are currently in the process of “cleaning” the data to get rid of the irrelevant details. We also converted the string data like “morning” to integers like 1, 2 and 3 so that it is easier to store and compare. Within each context dimension, the integer values range from 1 to the dimension’s total number of unique string responses in the original data representation. We hope that the data can be stored in a Tensor after cleaning and are researching how to implement this.

Currently, we have not implemented how to compute the similarities between the original string data, but plan to do so based on a simple 1 if they are the same and 0 if not. We do not expect there to be anything in-between since that would require judgment on aspects like how close is “morning” to “afternoon” compared to “afternoon” to “night”.

The plan is to research and implement storage of the excel data into a CSR based tensor in 1-2 weeks. After that spend another 1-2 on calculating similarity and producing recommendations. Potential problems might be verifying that the recommendation are correct.