## Recommender system and customer written reviews: A deep learning approach

How to incorporate the reviews of the customers to produce better recommendations

data prepocessing

- A significant portion of datasets have missing tags and similarities.
- Reviews should be processed including removing stop words, lemmitization and stemming

Dictionary development

- Initial dictionary of tags for each of 25 categories of products in Amazon.com dataset
- Removing tags used in the reviews with low frequency

Processed dataset

- · Constructing the user profile using tags from the reviews
- Constructing the user-tag-item matrix
- Extracting deep features from tag-item and user-tag using deep neural netwroks
- Constructing deep-feature tag-item-user matrix

Recommender Systems

- Implementation of recommender system based on matrix factorization using deep-feature tag-item-user matrix
- Implementation of recommender system based on deep neural networks using initial user-tag-item matrix
- implementation of recommender system based on deep neural networks using deep feature user-tag-item matrix

Results analysis and Performance evaluation

- Evaluation criteria: Recall, Precision, and F1-Score which are standard criteria for recommender systems
- Comparing the performance of the deep neural netwroks with various possible setting to obtain the best architecture
- Comparing the best performance of three recommender systems developed