CSE508 Winter 2024 Assignment 1 Report
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1
For preprocessing, I resized the images to (88,88,3), increased the contrast and brightness. And with 50% chance each, flipped or mirrored the image.
The model I used was ImageNet, removing the last layer to get the feature vectors.

2
For preprocessing, I removed stopwords, punctuations, did stemming, lemmatization from the tokens.
Then I calculated the term frequency-inverse document frequency score for the reviews.

3
Here,

4
For both Image and Review Retrieval I compared (computing the cosine score) the input Image/Review's features with all the other features. Storing them all in a list, then sorting it to then show the top 3 results.

5
Similar to part 4, the difference being that I took the average of the two cosine similarity scores here.

6

Top result for Image Retrieval

```
Image URL:  https://images-na.ssl-images-amazon.com/images/I/8128
Review:  IMO this is the best and only way to mount toms, especia
Cosine similarity of images:  0.92240953
Cosine similarity of reviews:  0.0088575844087293 18
Composite similarity score:  0.4656335594315375
```

Top result for Review Retrieval

```
Image URL:  ['https://images-na.ssl-images-amazon.com/images/I/81Z1d7HaBfL._SY88.jpg']
Review:  Nice solid springs and defeinitely more silent. Easy installation and the black looks cool.

Pictured with some old uninstalled springs next to them.
Cosine similarity of images:  0.62275696
Cosine similarity of reviews:  0.3331900140257178
Composite similarity score:  0.47797348601676515
```

The Image Retrieval gives higher scores as the number of tokens is very high, where as the images all have a very high similarity with each other as they are all reviews for instruments.