Window Shopping Simulator Algorithm

Data Preparation:

Images are from the dataset provided which has 16k+ images

Generate image embeddings from nvidia_efficientnet_b0 and store the embeddings and corresponding image names in a compressed format

Algorithm:

- Load the embeddings and image names files
- Maintain two Vectors Like vector and Dislike vector such that
- Like vector is a representation of previously liked vectors up to ‘t-1’
- Dislike vector is a representation of previously disliked vectors up to ‘t-1’
- Flow for choosing 4 images

  Find all embeddings (e) such that

  Distance between e and like vector < Distance between e and dislike vector + margin

  From the previously found embeddings select the top 4 embeddings such that distance between embeddings and like vector is minimum

  Plot the four images corresponding to the 4 embeddings. User will be asked to enter ratings for each image sequentially. Ratings code: Enter “1”: for like, “-1” for dislike, “0”: for Neutral.

  User will be asked whether to continue shopping or not. If continued next set of four images are displayed else terminated.

- Updating Like vector and Dislike vector

  Generate list of embeddings of liked images at time ‘t’ and call it curr_liked_embds

  Compute weighted average of curr_liked_embds and Like vector and assign it to Like vector

  Weights are such that curr_like_embds get 70% weight and Like vector gets 30% weight in computation.

  Dislike vector is also updated similarly.