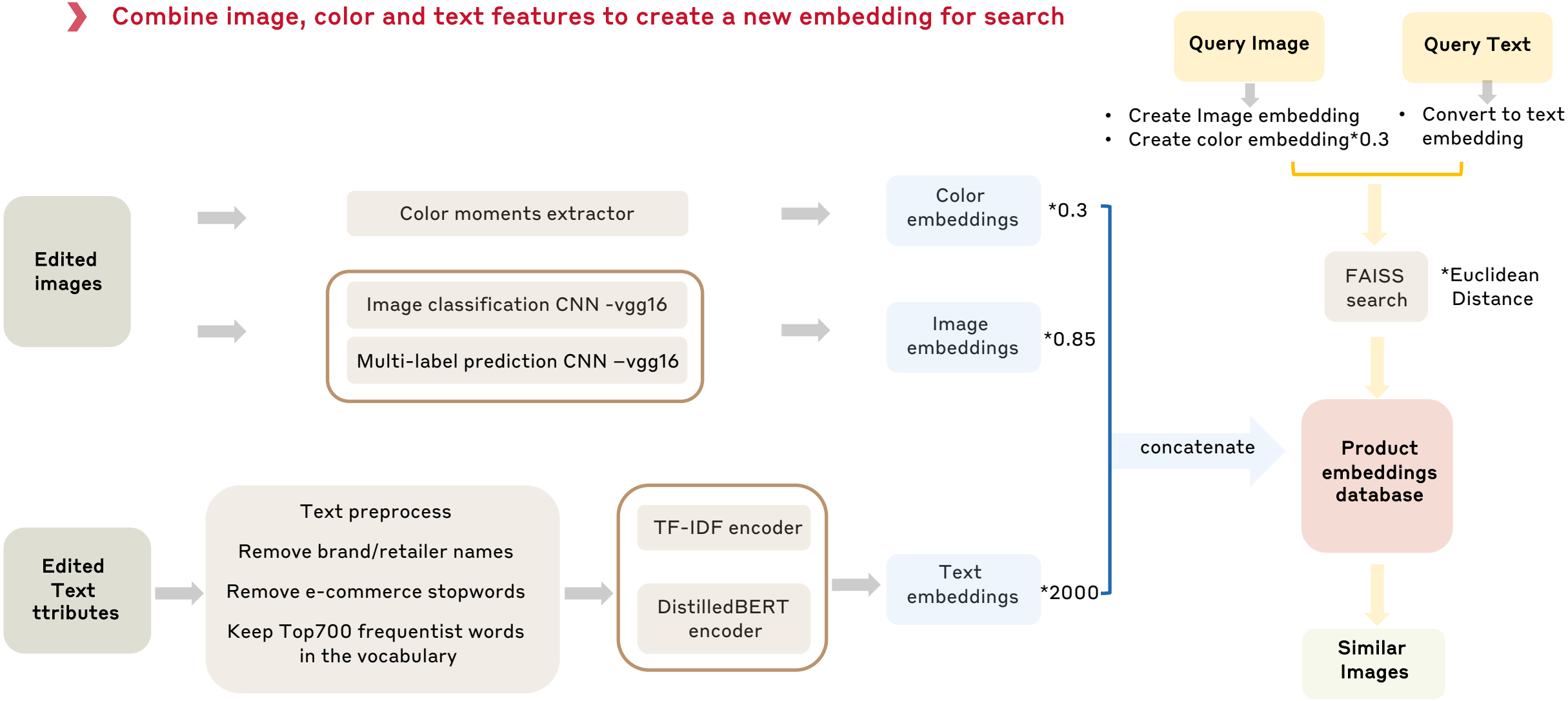
BURBERRY

LONDON ENGLAND

1. IMAGE RETRIEVAL USING MUTI-MODAL EMBEDDINGS

Combine image, color and text features to create a new embedding for search

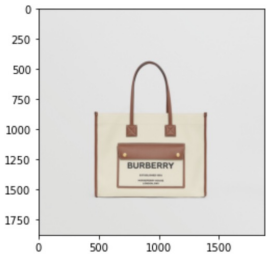


*Correct Items in TOP10 results are highlighted in green

2. RESULTS DEMONSTRATION

Current product database contains 10,000 non-Burberry products

Query Image



- Image and Top700 vocab

- Image, Top700 vocab and color feature

- Text only -Full vocabulary

- Text only -Top700 frequentist

- Image only

*Correct Items in TOP10 results are highlighted in green

2. RESULTS DEMONSTRATION

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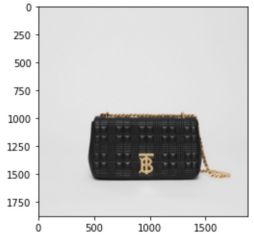
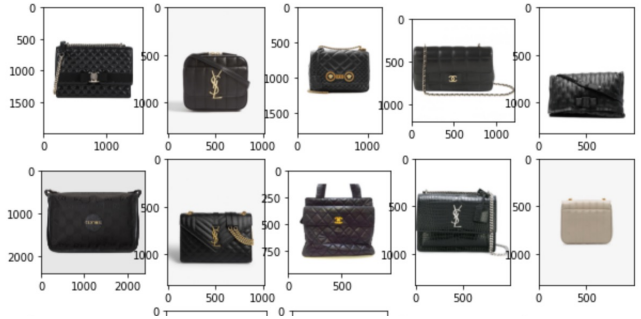
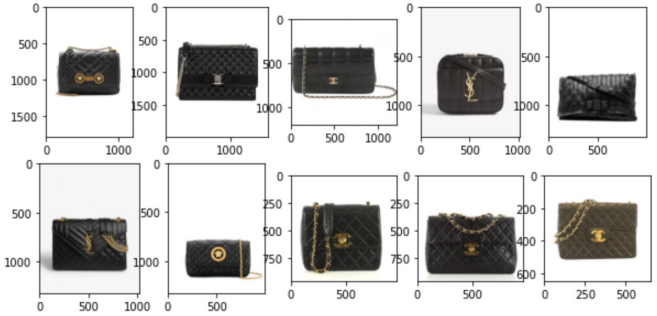
Query Image



- Image and Top700 vocab



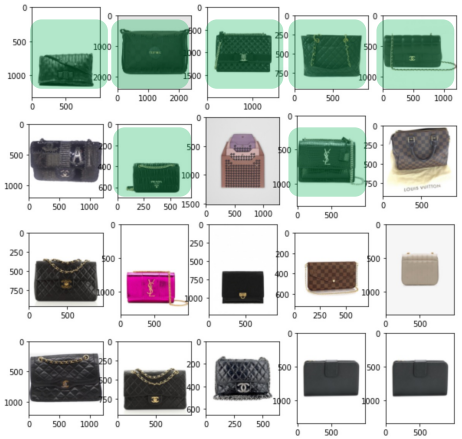
- Image, Top700 vocab and color feature



- Text only -Full vocabulary

- Text only -Top700 frequentist

- Image only



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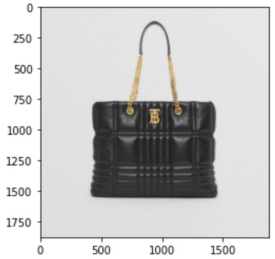
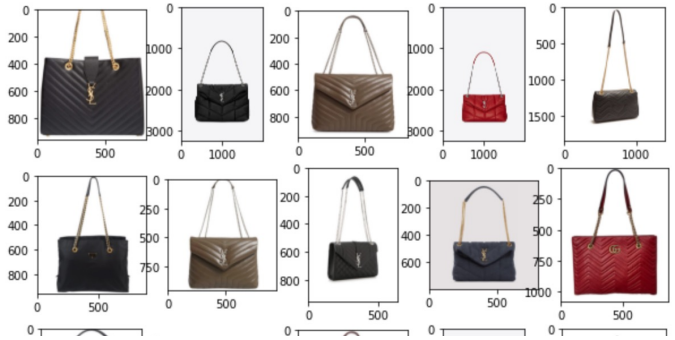
2. RESULTS DEMONSTRATION

❯ Current product database contains 10,000 non-Burberry products

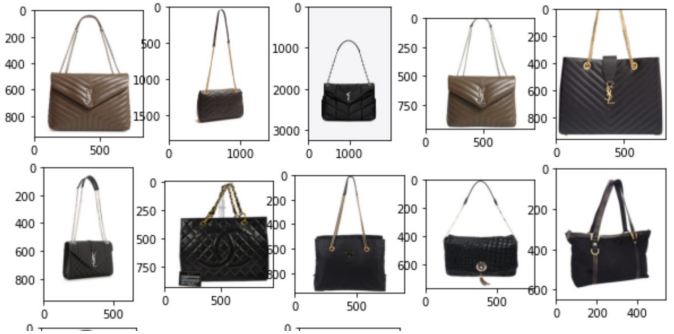
Query Image



- Image and Top700 vocab



- Image, Top700 vocab and color feature



- Text only -Full vocabulary

- Text only -Top700 frequentist

- Image only

3. INSIGHTS ON DEMO RESULTS

❯ Updated and built a new prediction model

- Retrieval performance of multi-modal model is better than all uni-modal models
- Model using Top700 frequentist word and image embeddings is better than model using full vocab and image embeddings
- The current combination of weights used during concatenation of all three embeddings delivers stable performance
- Retrieval results is better when the description of the query text is concise, details may become extra noise
- Multi-modal model is sensitive to the how much information does query text hold
- TF-IDF works better than complex language model like BERT as descriptions tend to be straightforward and little inferring needs to be done

4. NEXT STEP

❯ Different Architectures

- Working on new multi-label prediction CNN to see if image embedding quality can be improved
- Resample the dataset for database to include more distinct products that includes first-party data only
- Hard to quantify the accuracy for this image retrieval tasks, may use other datasets to benchmark the performance