

# Similar images recommender system for eye frames

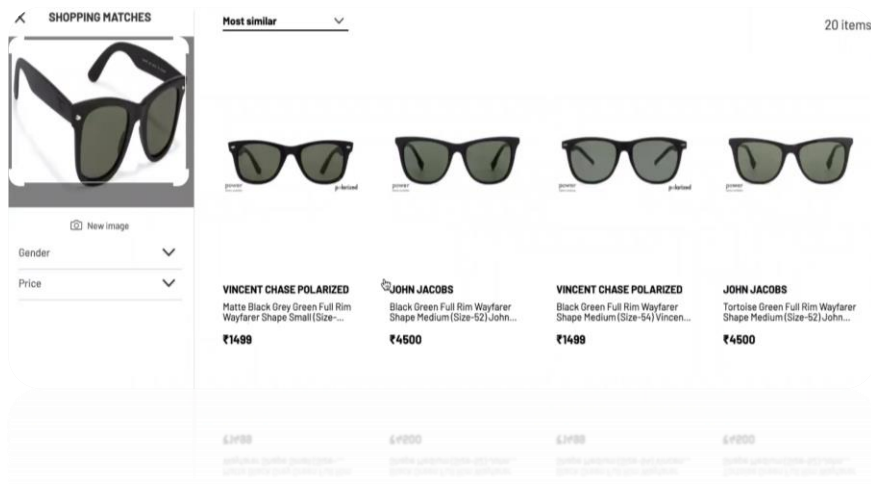
---



INDRAPRASTHA INSTITUTE *of*  
INFORMATION TECHNOLOGY  
DELHI



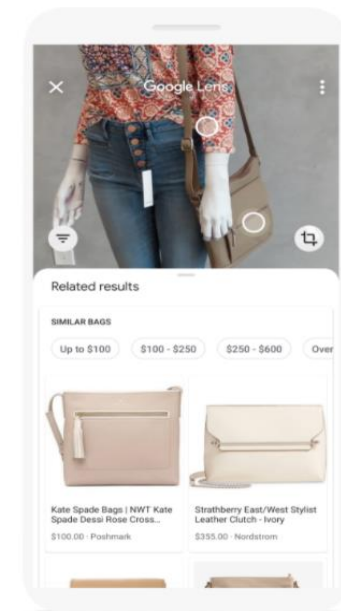
# Motivation and Literature Review



**Website: Lenskart**

## Find a look you like

See an outfit that caught your eye? Or a chair that's perfect for your living room? Get inspired by similar clothes, furniture, and home decor—without having to describe what you're looking for in a search box.



**Google Lens**

## Literature Review:

- *Image Classification for E-Commerce — Part I*- <https://towardsdatascience.com/product-image-classification-with-deep-learning-part-i-5bc4e8dccc41>
- *Building a Reverse Image Search Engine: Understanding Embeddings*- <https://www.oreilly.com/library/view/practical-deep-learning/9781492034858/ch04.html>
- Srikanth Tammina (2019); *Transfer learning using VGG-16 with Deep Convolutional Neural Network for Classifying Images*; *International Journal of Scientific and Research Publications (IJSRP)* 9(10) (ISSN: 2250-3153), DOI: <http://dx.doi.org/10.29322/IJSRP.9.10.2019.p9420>

# Dataset Description and Preprocessing



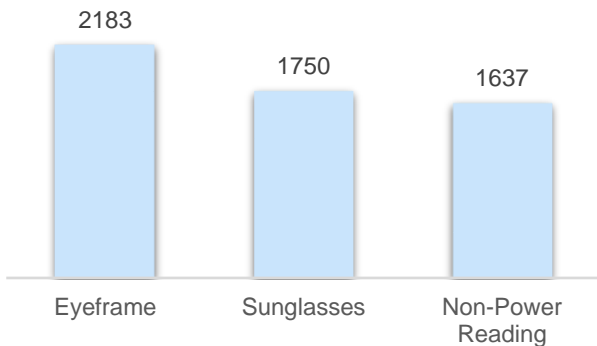
## Features of the dataset:

- Product\_name
- Product\_id - unique product id
- Parent\_category - categorical column
- Image\_Front - url of the image
- frame\_shape - categorical column

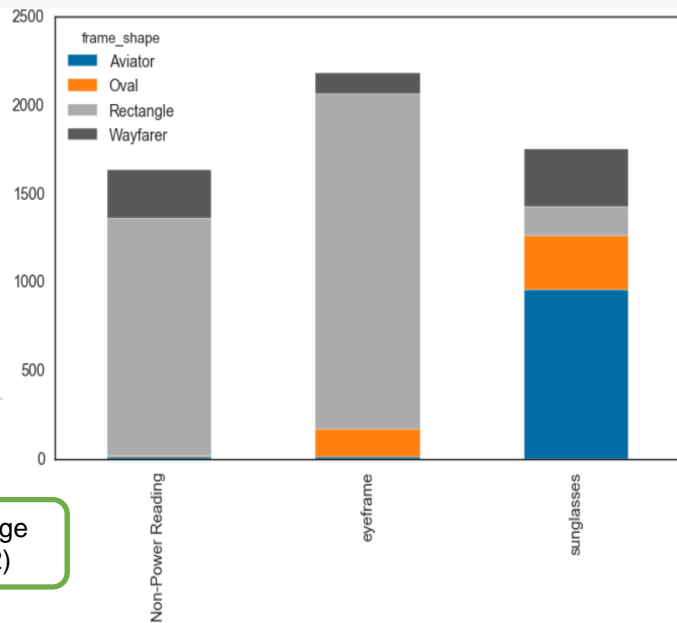
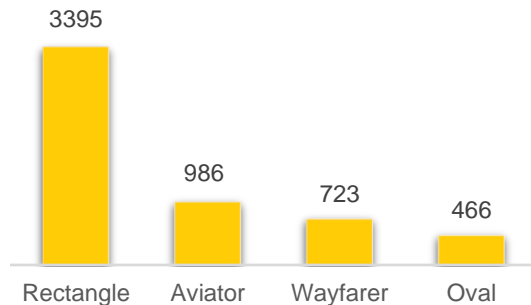
	product_name	product_id	parent_category	Image_Front	frame_shape
0	Vintage Persona C4	7641	eyeframe	<a href="http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/v/i/vintage-persona-c4-52-15-135_1_.jpg">http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/v/i/vintage-persona-c4-52-15-135_1_.jpg</a>	Rectangle
1	Vintage Crazy-X C2 Red	7643	eyeframe	<a href="http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/v/i/vintage-crazy-x-c2-51-15-130_3__1_.jpg">http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/v/i/vintage-crazy-x-c2-51-15-130_3__1_.jpg</a>	Rectangle
2	Jialedi Eyewear 1086 C8 Blue	8254	eyeframe	<a href="http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/D/S/DSC_0001_6.JPG">http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/D/S/DSC_0001_6.JPG</a>	Rectangle
3	Jialedi Eyewear 1086 C6 Red	8255	eyeframe	<a href="http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/D/S/DSC_0010_4.JPG">http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/D/S/DSC_0010_4.JPG</a>	Rectangle
4	Jialedi Eyewear 1086 C4 Tortoise Transparent	8256	eyeframe	<a href="http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/D/S/DSC_0017_3.JPG">http://d3b4di70nev5h5.cloudfront.net/media/catalog/product/D/S/DSC_0017_3.JPG</a>	Rectangle

**Dataset Size: 5570**

Parent Category



Frame Shape



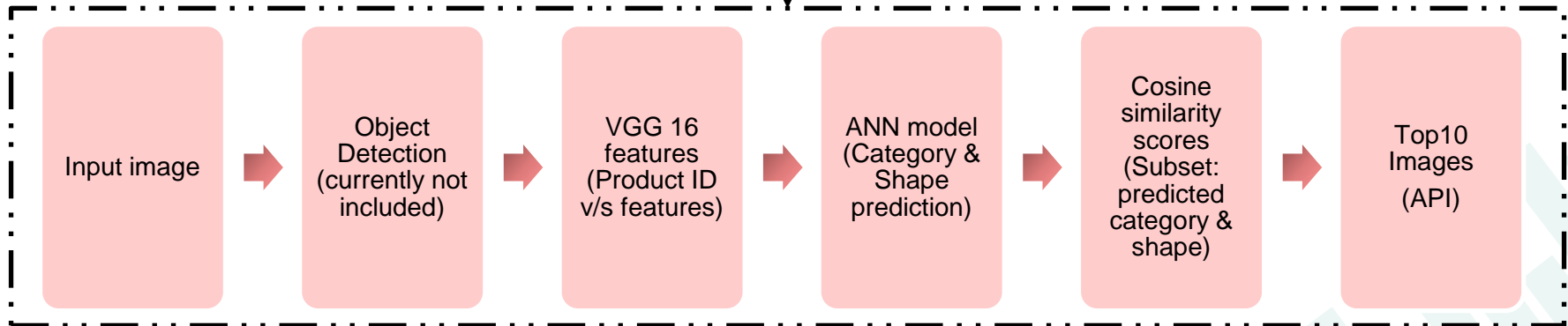
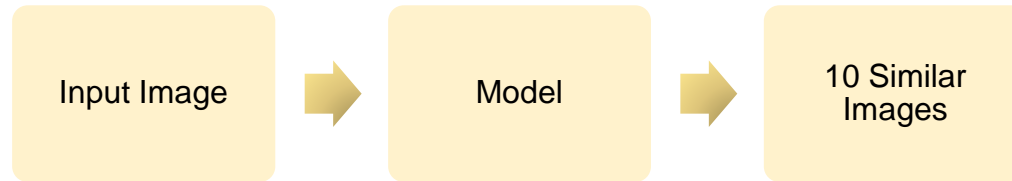
**Pre-processing :**

Image\_to\_array  
(224,224,3)

VGG 16

Features Storage  
(5570,7,7,512)

# Methodology



# Results and Team Contribution



**Parent Category:**

sunglasses

**Frame Shape:**

Oval

The Top 10 most similar images are :



**Parent Category:**

eyeframe

**Frame Shape:**

Rectangle

The Top 10 most similar images are :



Epoch 250/250  
5570/5570 [=====] - 20s 4ms/sample - loss: 0.3556 - op\_cat\_loss: 0.0845 - op\_shape\_loss: 0.2700  
- op\_cat\_accuracy: 0.9720 - op\_shape\_accuracy: 0.9038

