

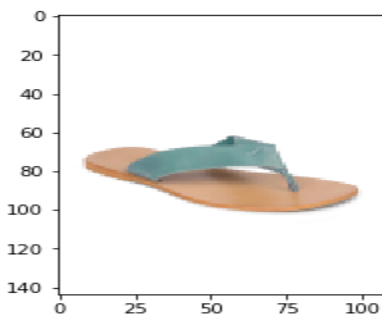
Transfer Learning

Pret-trained model's performance analysis

Trained using 5000 different product images and checked similarity ranking. Following is the output of different models-

ResNet50

Sandals-ResNet50



im136

im3385

im2276



im2058

im530

im4955



Fig-1: Query image of sandal and suggested similar products

idx_rec

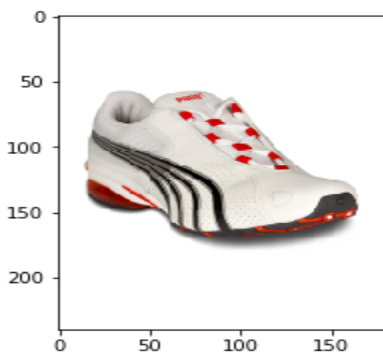
```
Int64Index([136, 3385, 2276, 2058, 530, 4955], dtype='int64')
```

idx_sim

```
[0.8712924, 0.8173516, 0.7887774, 0.7873425, 0.77717, 0.770584]
```

Fig-2: Similar ids indices and corresponding similarity value for each sandal

Shoes-ResNet50



im3346

im4130

im4874



im2500



im1804



im2124



Fig-3: Query image of sport shoe and suggested similar shoes

idx_rec

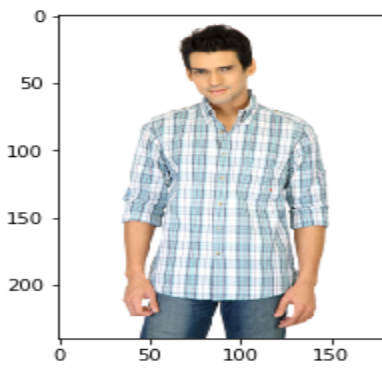
```
Int64Index([3346, 4130, 4874, 2500, 1804, 2124], dtype='int64')
```

idx_sim

```
[0.8268212, 0.81689644, 0.8135418, 0.8132038, 0.8028992, 0.8008078]
```

Fig-4: Similar ids indices and corresponding similarity value for each shoe

Shirts-ResNet50



im251



im659



im2400



im0



im1821



im383



Fig-5: Query image of shirt and suggested similar shirts

idx_rec

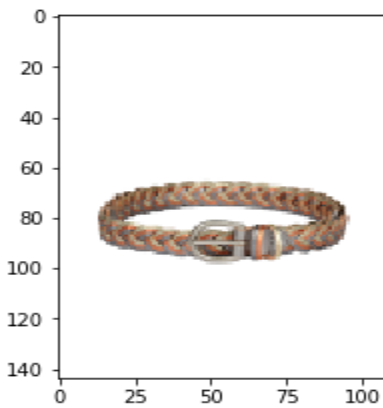
```
Int64Index([251, 659, 2400, 0, 1821, 383], dtype='int64')
```

idx_sim

```
[0.9202468, 0.9184336, 0.91548115, 0.910971, 0.9106053, 0.90919757]
```

Fig-6: Similar ids indices and similarity values of corresponding shirts

Belts-ResNet50



im4942

im2922

im3002



im3387



im3782



im472



Fig-7: Query image of belt and suggested visually similar products

idx_rec

```
] Int64Index([4942, 2922, 3002, 3387, 3782, 472], dtype='int64')
```

+ Code

+ Markdown

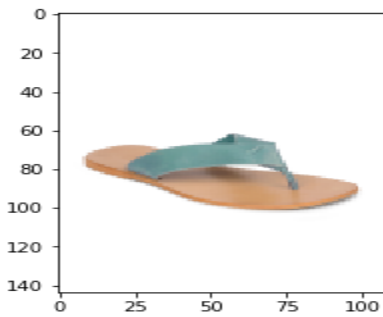
idx_sim

```
] [0.7640512, 0.71889216, 0.705916, 0.69984186, 0.6974356, 0.6933789]
```

Fig-8: Similar product's ids and similarity values of corresponding shirts

Xception

Sandals-Xception



im136

im3385

im3857



im872

im2963

im1507



Fig-1: Query image of sandal and suggested similar products

```
idx_rec
```

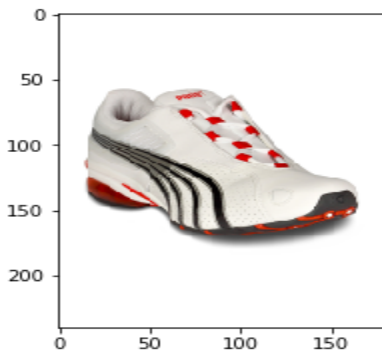
```
] Int64Index([136, 3385, 3857, 872, 2963, 1507], dtype='int64')
```

```
idx_sim
```

```
] [0.8732509, 0.8412363, 0.8409403, 0.840348, 0.8345003, 0.80516255]
```

Fig-2: Similar ids indices and corresponding similarity value for each sandal

Shoes-Xception



im3346

im4341

im3659



im1212



im1959



im1255



Fig-3: Query image of sport shoe and suggested similar shoes

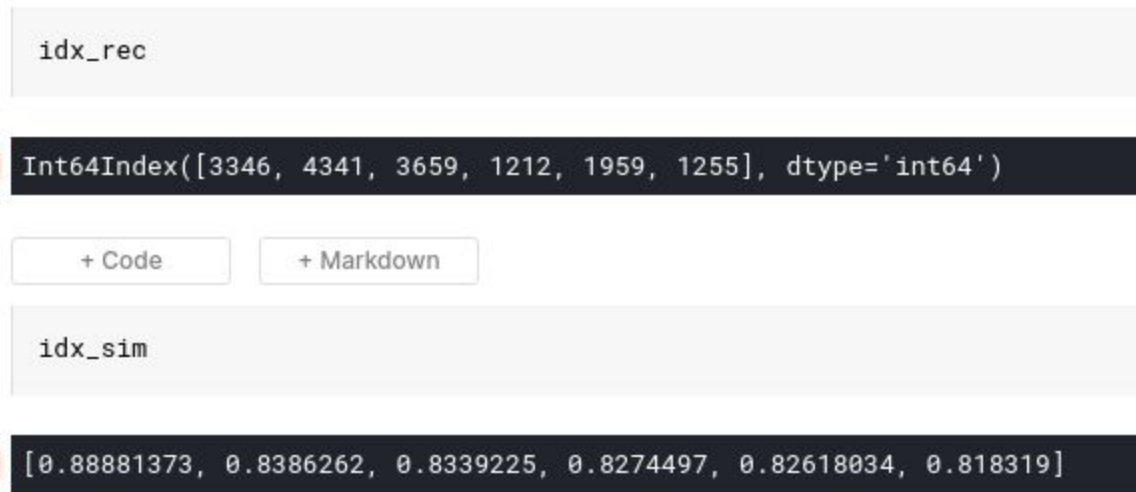
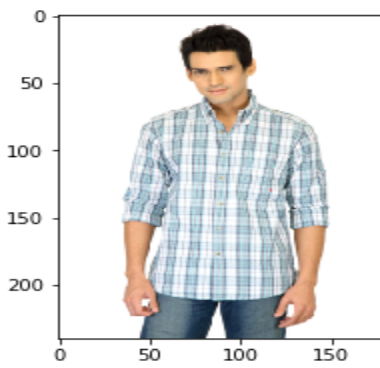


Fig-4: Similar ids indices and corresponding similarity value for each shoe

Shirts-Xception



im251



im1127



im3006



im634



im383



im3967



Fig-5: Query image of shirt and suggested similar shirts

```
idx_rec
```

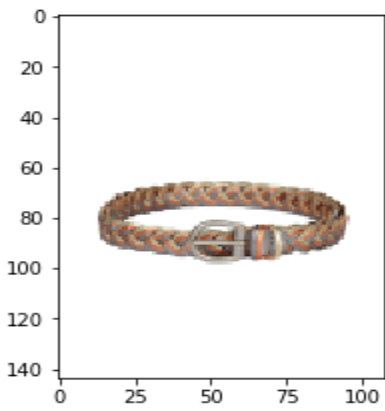
```
Int64Index([251, 1127, 3006, 634, 383, 3967], dtype='int64')
```

```
idx_sim
```

```
[0.9063777, 0.9019556, 0.89752704, 0.89668506, 0.890142, 0.88916576]
```

Fig-6: Similar ids indices and similarity values of corresponding shirts

Belts-Xception



im2922

im1048

im3784



im3718



im4942



im4696



Fig-7: Query image of belt and suggested visually similar products

```
idx_rec
```

```
] Int64Index([2922, 1048, 3784, 3718, 4942, 4696], dtype='int64')
```

+ Code + Markdown

```
idx_sim
```

```
] [0.685058, 0.6831701, 0.6604946, 0.65135163, 0.6467262, 0.6452051]
```

Fig-8: Similar product's ids and similarity values of corresponding shirts

ResNet50 vs Xception

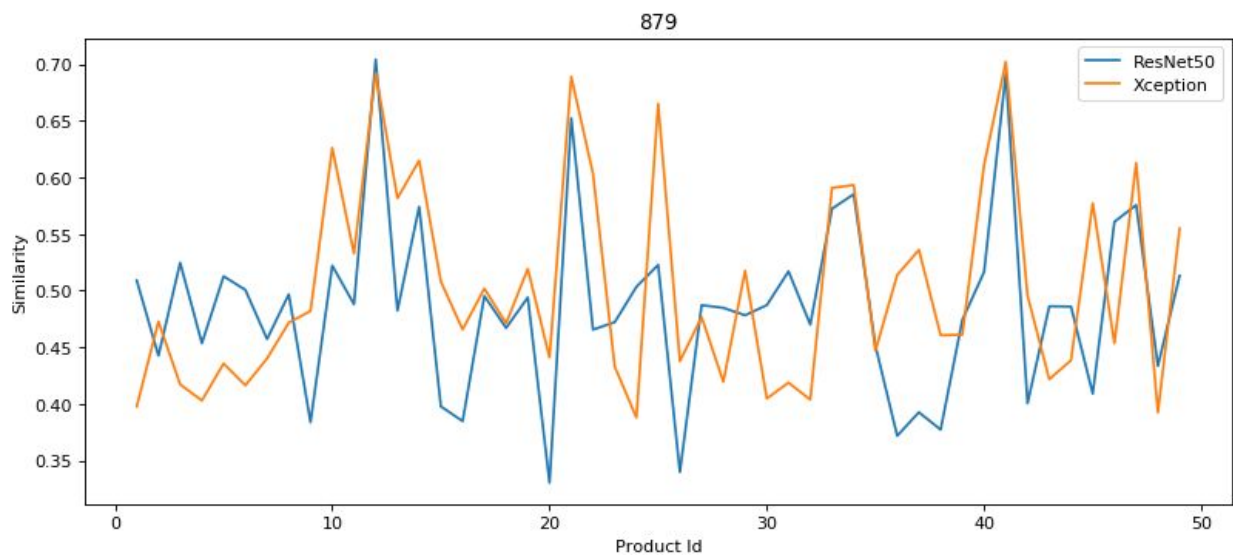


Fig-9: Similarity between product-879 and first 50 other products

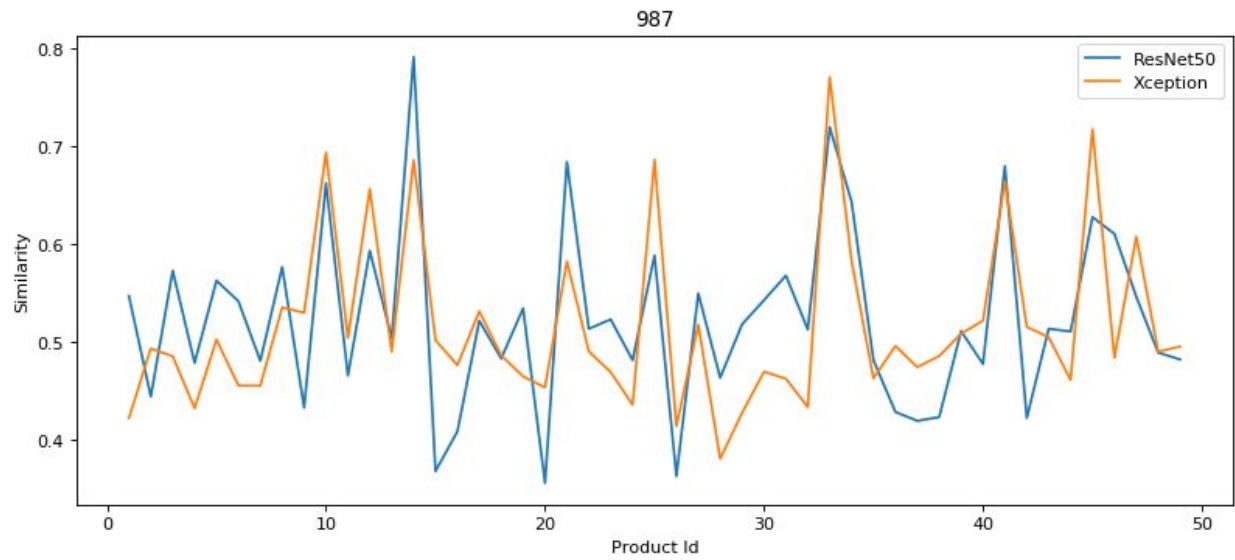


Fig-10: Similarity between product-987 and first 50 other products

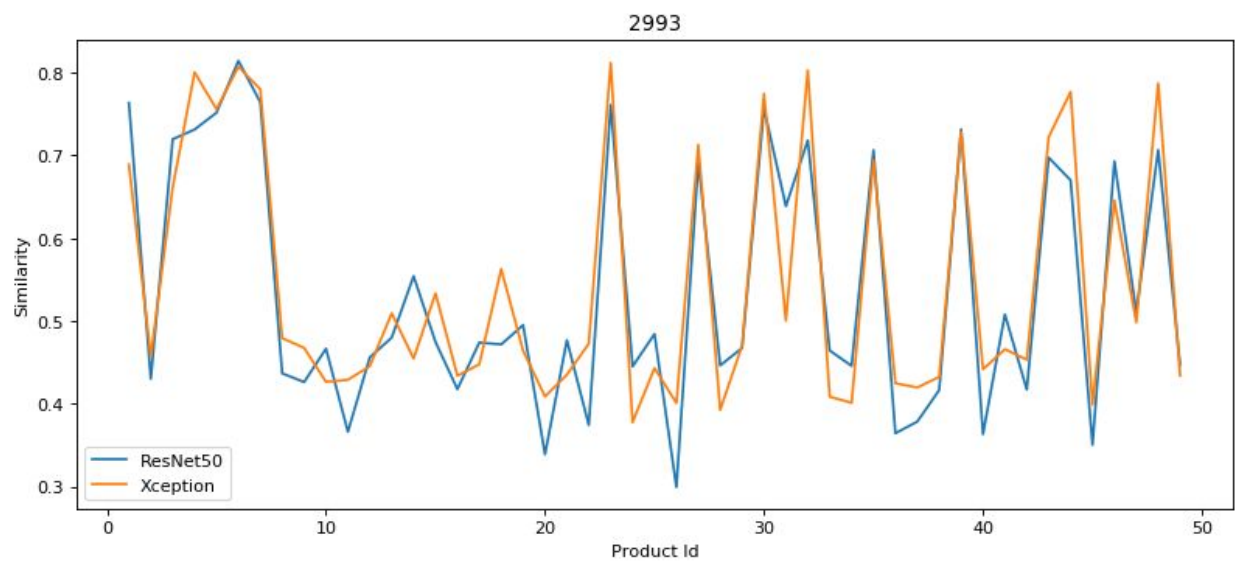


Fig-11: Similarity between product-2993 and first 50 other products

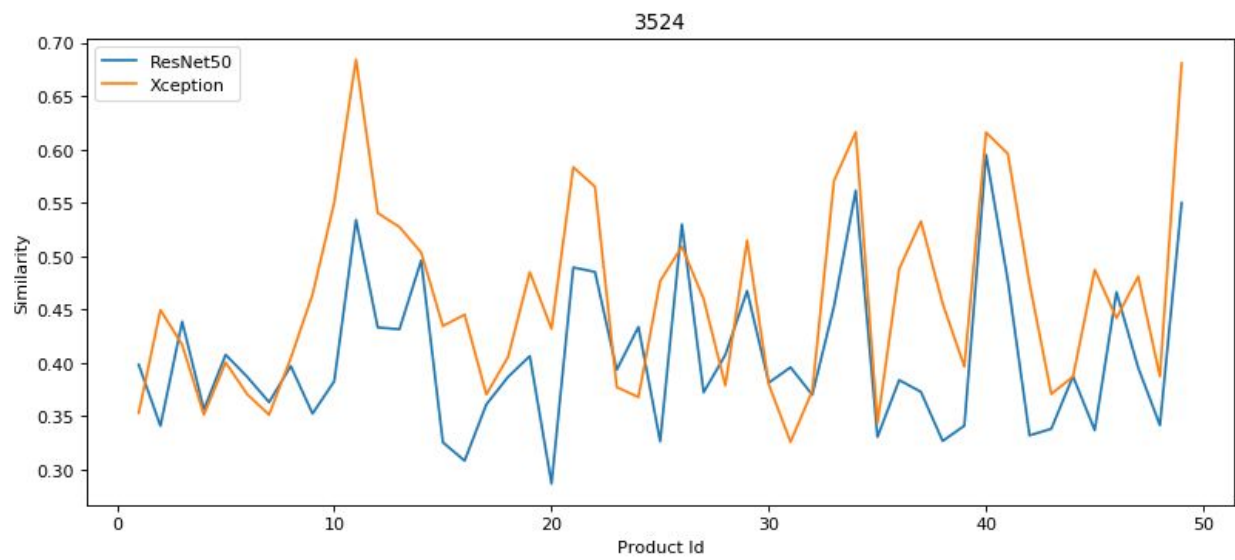


Fig-12: Similarity between product-3524 and first 50 other products