

### Abstract

Kalas Iris is an automated clothing category and attributes annotation service for e-commerce websites with similar item search capabilities. It is accessible via a web UI, mobile application, WooCommerce extension or REST API. Our neural network generates the categories and attributes of an clothing item solely based on its image. It is also possible to search for the similar clothing items to a given image inside a shop database. Finally our services can be integrated to e-commerce websites so that the uploaded images will be automatically annotated and updated on the target website.

### MMFashion

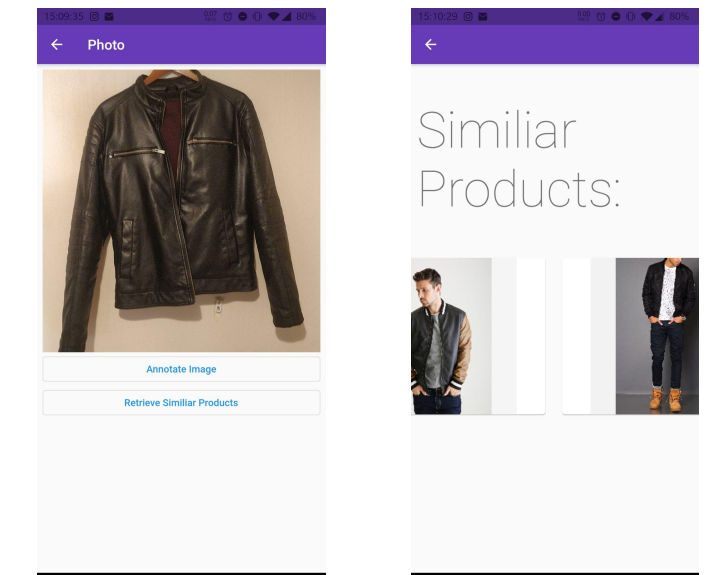
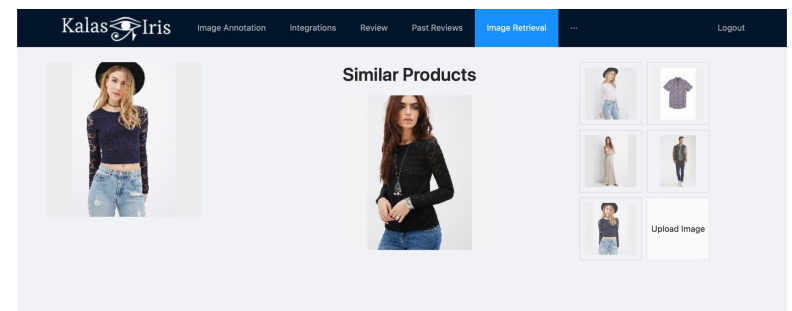
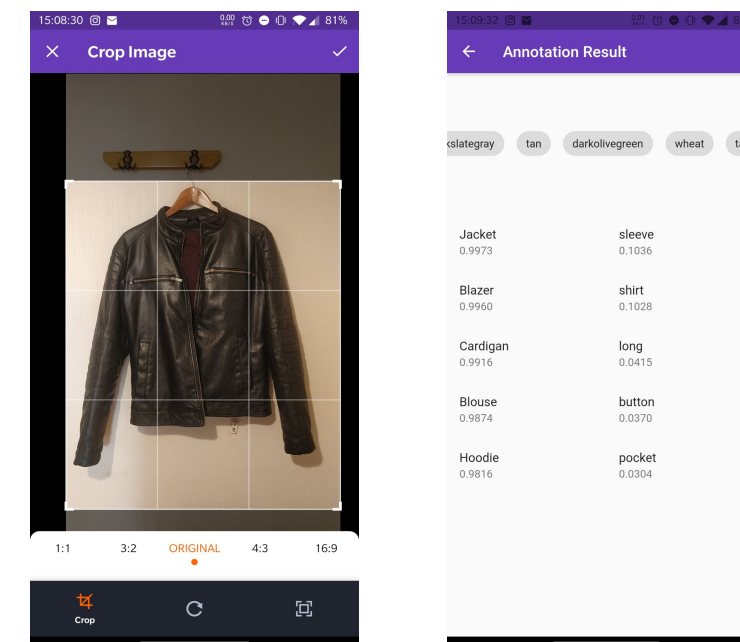
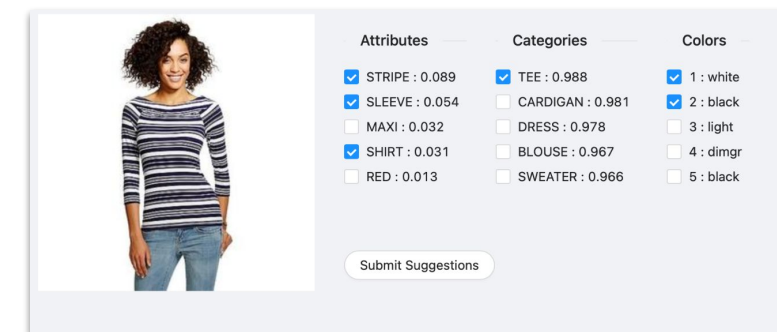
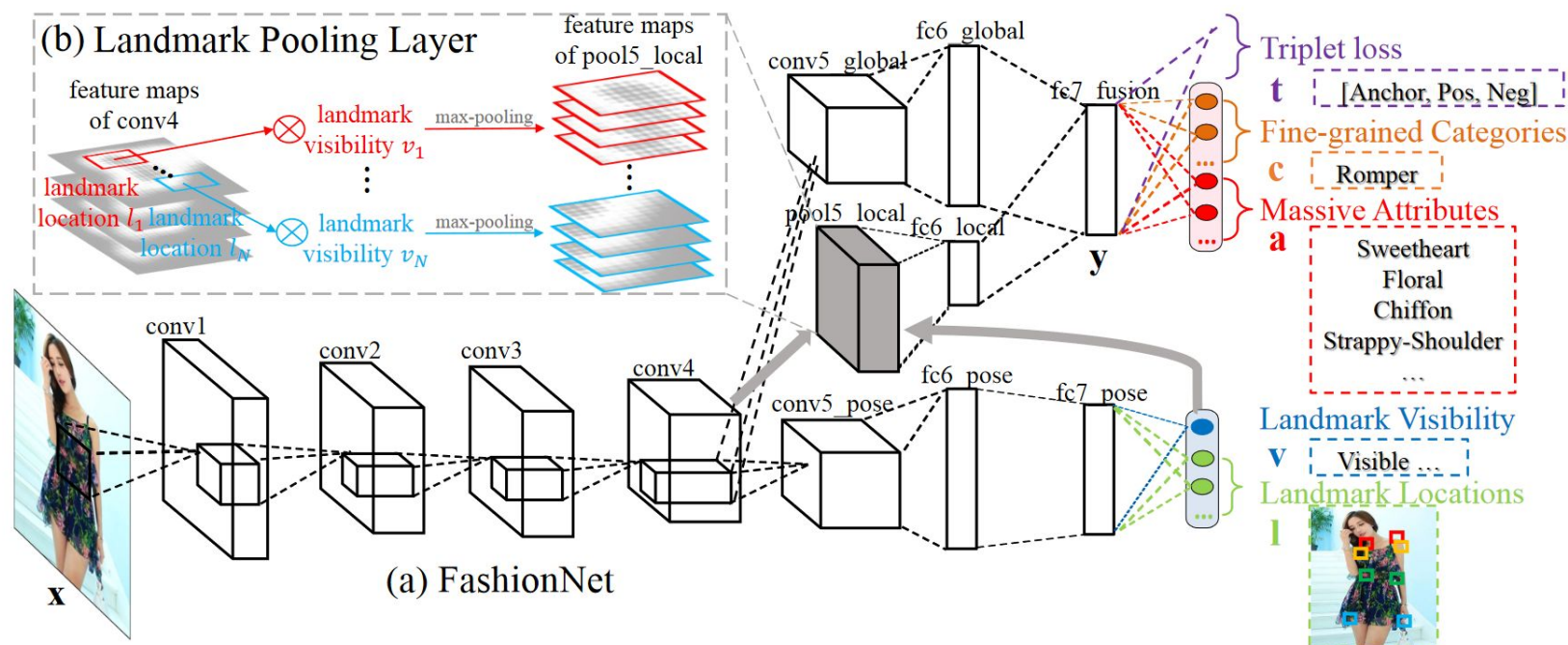
Kalas Iris uses MmFashion [1], a visual fashion analysis tool based on PyTorch. MmFashion is capable of predicting categories, attributes and retrieving similar products. The picture below illustrates the neural network structure of the model.

### Fashion Image Annotation

Kalas Iris service can find the category, attributes and most used colors of the clothing item solely from its image. Users can manually upload and try this annotation service and the can suggest better annotations. Those suggestions are saved for improving the neural network's performance.

### Similar Item Search

It is also possible to search for the similar clothing items inside a shop. Using our web interface, users can upload their clothing item images and search for the similar items found in the in-shop database.



### Tools



### Dataset

We are using DeepFashion to train our machine learning model, which consists of 800,000+ fashion images from professionally taken shop images to consumer photos. Each image in the dataset is labeled with 50 categories and 1,000 descriptive attributes.

The DeepFashion dataset is split into 5 different sub categories: Attribute Prediction, In-Shop Retrieval, Consumer-To-Shop Retrieval, Landmark Detection and Fashion Synthesis.

### Integrations

Currently Kalas Iris API can be used with e-commerce websites powered by WooCommerce. Using the Kalas Iris integrations, the website owners can easily add automatic annotation and category services to their e-commerce website. Whenever a new product is added, it will be automatically annotated by the Kalas Iris service.

### References

- [1] Xin Liu, Jiancheng Li, Jiaqi Wang, and Ziwei Liu. Mmfashion: An open-source toolbox for visual fashion analysis. arXiv preprint arXiv:2005.08847, 2020.
- [2] Ziwei Liu, Ping Luo, Shi Qiu, Xiaogang Wang, and Xiaoou Tang. Deepfashion: Powering robust clothes recognition and retrieval with rich annotations. In Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2016.