

# iMaterialist Fashion Challenge at FGVC5

Multilabel image classification

# Image Classification Problem

- Automatic product detection
  - Must accurately assign attribute labels to fashion images
- 228 different labels
- 1 million images in training set
- 40,000 image in testing set
- 10,000 images in validation set

# Challenges

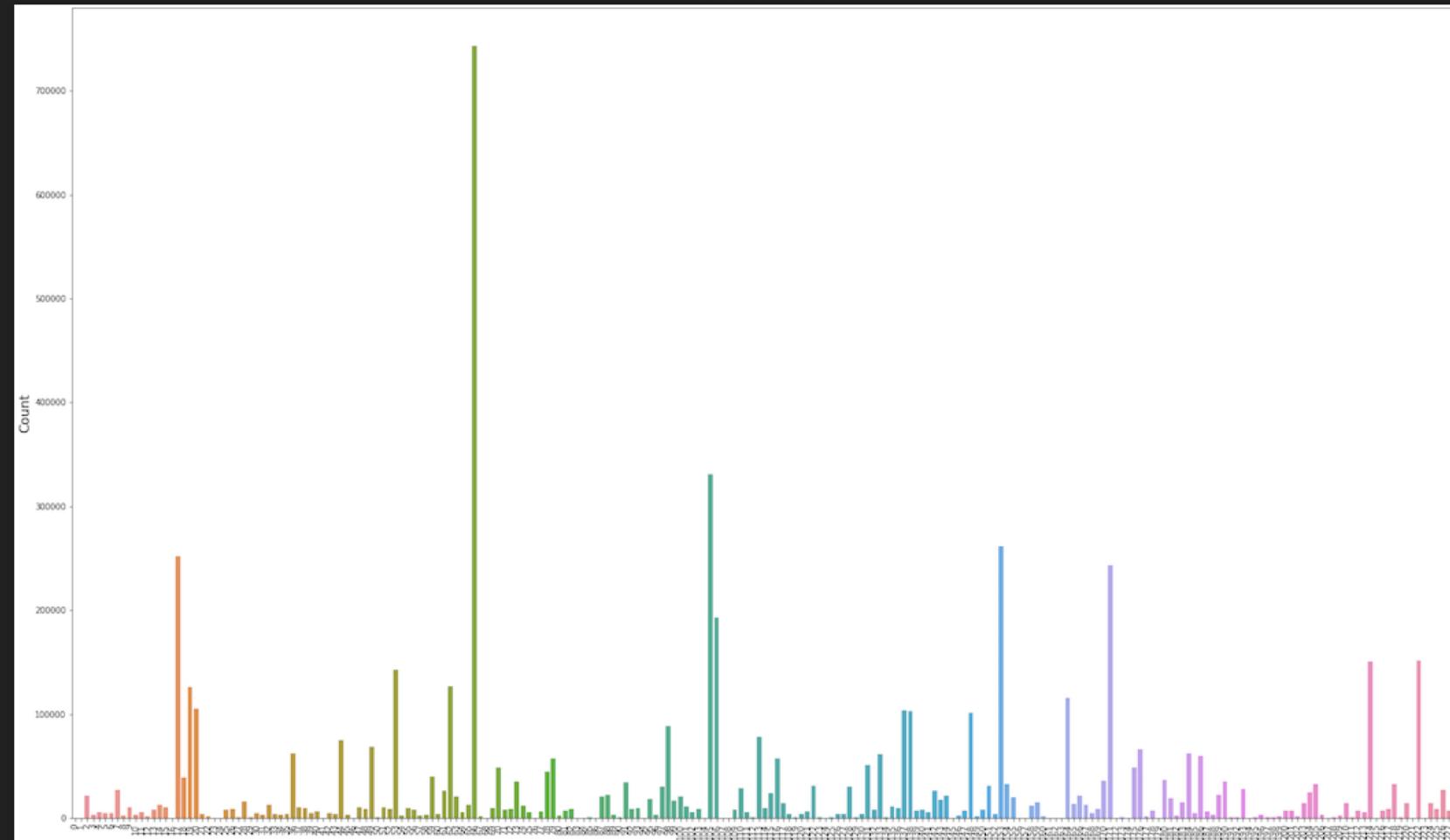
- Most images have duplicate labels
- Different levels of saturation and occlusion
- Variety of lighting and angles
- Discerning between some fine-grained color categories (e.g. turquoise vs. light blue)
- 10+ hours to download images

# Image Examples

潮流前线  
조류진선!



# Distribution of Labels



# Maximum Number of Labels

Labels: 62, 19, 14, 78, 79, 117, 131, 17, 222, 142, 226, 148, 77, 66, 102, 53, 176, 224, 167, 137, 153, 105, 184



# Single Label

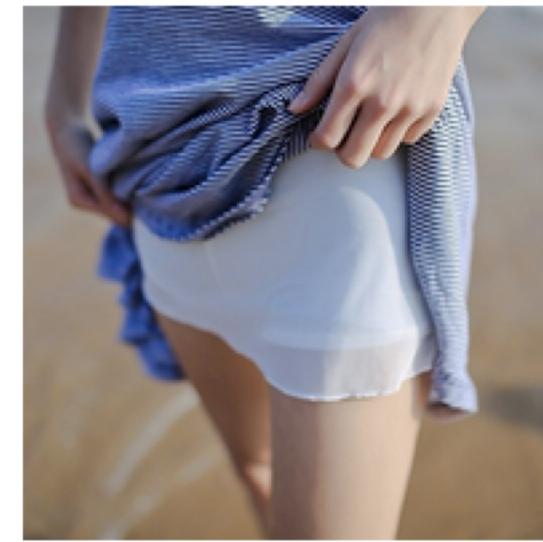
**Label: 66**



**Label: 106**



**Label: 66**



# Approach

- Not much preprocessing is required, maybe some automatic bounding or cropping
- Must download images and load them into a dataframe with appropriate labels
- Idea to utilize Google Colab: <https://colab.research.google.com/>
  - Compress and upload images to Google Drive in order to access them
- Utilize Tensorflow Object Detection as a starting point
- Could also use pretrained model like VGG16, InceptionV3 or ResNet
  - Compare results from various models