LOW RESOLUTION FACE RECOGNITION

Objective

- We are training a deep learning model for facial recognition in low resolution images.

- Labeled Faces in the Wild(LFW) dataset will be used to downsample image size for creating low-resolution images.

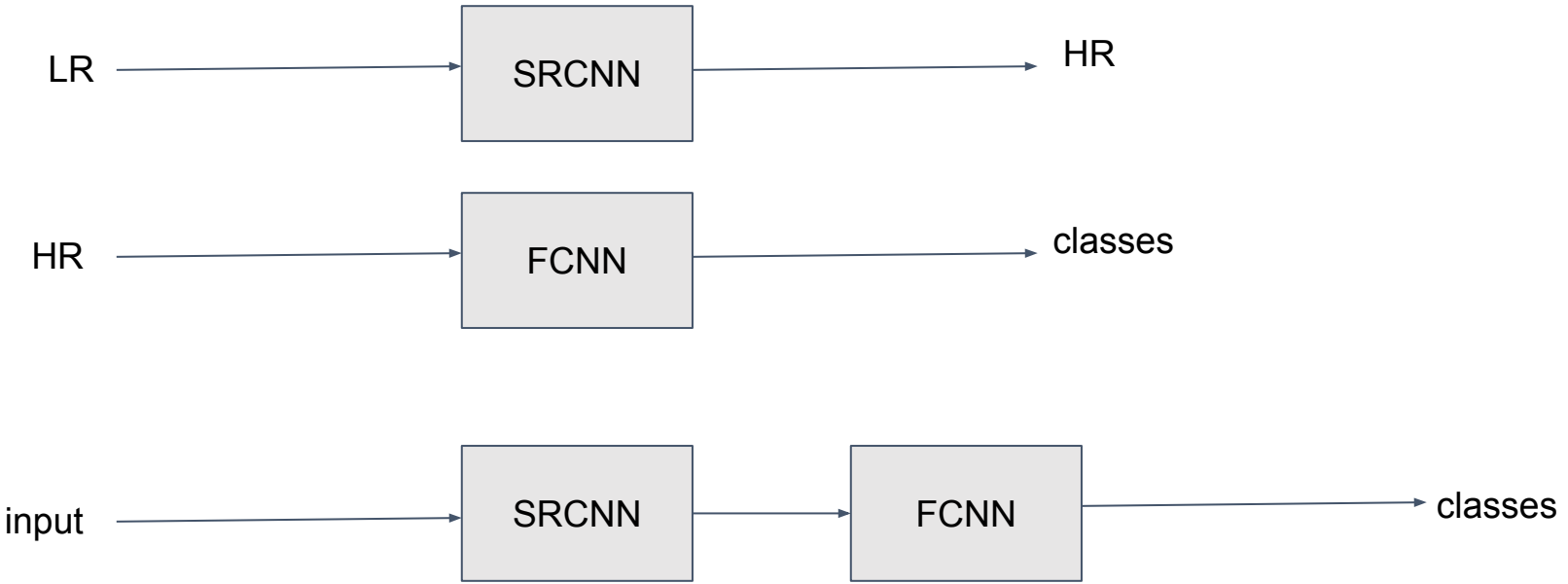
Preprocessing

1. To generate low resolution images for a given subsample rate ‘k’, downsample the image by same factor and then upsample it using bicubic interpolation to restore the original image. We will treat images obtained in this manner as low resolution images. In this way, we will have three samples of each image.

2. As a second step we will crop the image such that it has only the face of the subject.

3. Third, we will obtain the eigenfaces or use linear discriminant analysis (LDA) to extract the class specific information.

Architecture



Training

1. First we fine tune pretrained VGG net on 2.5M faces on our dataset.
2. Then we train SRCNN on LR images to get HR iages
3. Then we combine above two models and fine tune on LR images to get output.

Thank You!