**DataSet Preprocessing techniques.**

1. **Data\_resizing : images in the dataset must have a standard spatial resolution.**

* OpenCV can be used.
* The need for this preprocessing technique is that the input to the neural network must be of the same number of pixels as the NN has only predefined neurons in the input layer.
* Different image sizes can be used but to handle it will be complex.

Instead use downsampling or upsampling to prevent such complex operations at the same time achieve good results.

1. **Normalization : pixel values must be between [0,1] or [-1,1].**

* This causes the training time to be reduced.
* Different types of Normalizations are z-score,min-max,etc.

1. **Data Augmentation with various different face orientations**
2. **Image denoising:**

Removing noise from the images can help to improve the accuracy of the model by reducing the impact of irrelevant features. Techniques such as median filtering or Gaussian smoothing can be used for this purpose.

1. **Image cropping:**

Cropping the images to focus on the face region can help to improve the accuracy of deepfake detection algorithms. This can also help to reduce the impact of irrelevant background information.