

Pre-processing Techniques required for Data

- **Data Cleaning:** imputing the Nan values with mean/ median/ mode or KNN imputer or some other techniques and handling the noise in the dataset and removing the unnecessary features or columns from the dataset
- **Data Transformation:** Handling the distribution of the data like scaling the data to make the numerical values into same range throughout the dataset. Performing the data Normalization techniques to make the distribution of the data into normal distribution so that there will be no skewness in the dataset
- **Dimensionality Reduction / Feature Selection:** Reducing the features which are helpful to do the prediction by using principle component analysis or using correlation matrix or by some other method. Extracting the important features helps for good accuracy.
- **Feature Extraction:** Extracting the features from the image can be used for the
 1. Object Detection
 2. Image Classification
 3. Image matching and many more

Panaroma Stitching:

Image stitching or **photo stitching** is the process of combining multiple photographic images with overlapping fields of view to produce a segmented **panorama** or high-resolution **image**.

Image stitching is widely used in modern applications, such as the following:

- Document mosaicking^[5]
- Image stabilization feature in camcorders that use frame-rate image alignment
- High-resolution photomosaic in digital maps and satellite imagery
- Medical imaging

- Multiple-image super-resolution imaging
- Video stitching^[6]
- Object insertion

Some mains steps for image stitching algorithms

- From the 2 images we have to extract the keypoints
- Matching the keypoints from the 2 images
- Using the RANSAC algorithm to estimate a homographymatrix using our matched feature vectors