

we have an image of a kitten we will convert the image to grayscale we calculate the magnitude and angles of the gradients using sobel the images are divided in a grid fashion into cells and

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for the pixels within each cell a histogram of gradient directions is compiled to improve imbalance to highlights and shadows in the image cells are block normalized

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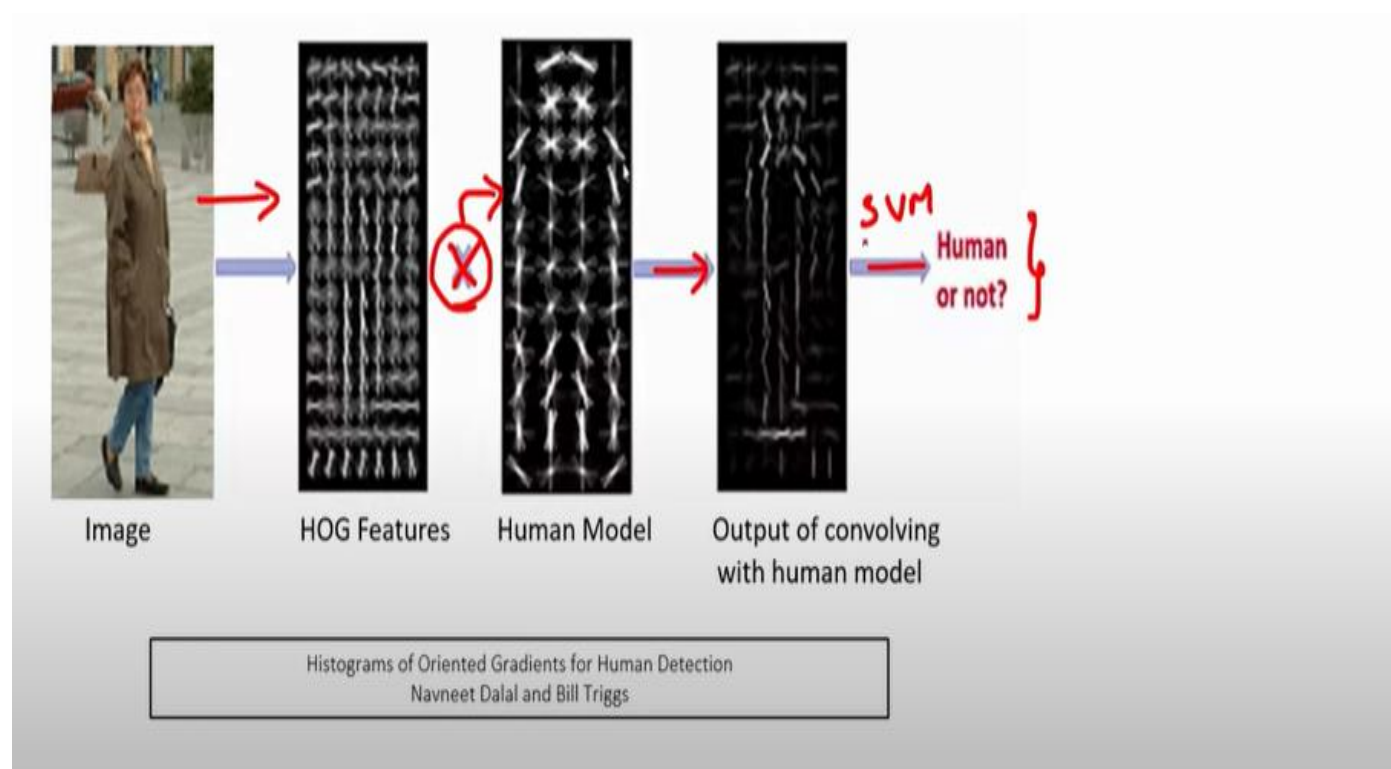
the hog feature vector is a combination of all pixel level histograms and used with svm to classify the image this example is simplified we must also consider other free parameters like number of image cells or how many angle

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bins in the histogram there are other types of features for images like surf and sift check out the opencv documentation for more we can summarize the entire machine learning process as follows

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feature extraction kernel that is non-linear mapping linear classification



take a image1/extract the hog featurrs.2.after extracion convel the image with the human template

3.THE HUMAN Model is the filter for how the hog features for humans looks.After convolution we will get the output.AFTER THAT WE WILL FEED IT TOI A CLASSIFIER Called svm or any other classifier which will the human is original or not

ACTIVE CONQUERS:

Active Contour (Boundary Detection)

- Segmentation is a section of image processing for the separation or segregation of information from the required target region of the image. There are different techniques used for segmentation of pixels of interest from the image.
- Active contour is one of the active models in segmentation techniques, which makes use of the energy constraints and forces in the image for separation of region of interest. Active contour defines a separate boundary or curvature for the regions of target object for segmentation.

Active Contour(Cont.)

- Application of Active Contour
 - Medical Imaging
 - Brain CT images
 - MRI images
 - Cardiac images
 - Motion Tracking
 - Stereo Tracking

What is Active Contour?

Given: Approximate boundary (contour) around the object

Task: Evolve (move) the contour to fit exact object boundary

Active Contour:

Iteratively “deform” the initial contour so that:

- It is near pixels with high gradient (edges)
- It is smooth



Image

Example of Active Contour (Cont.)

Motion Tracking



EXISTING METHOD :

edge-preserving filter

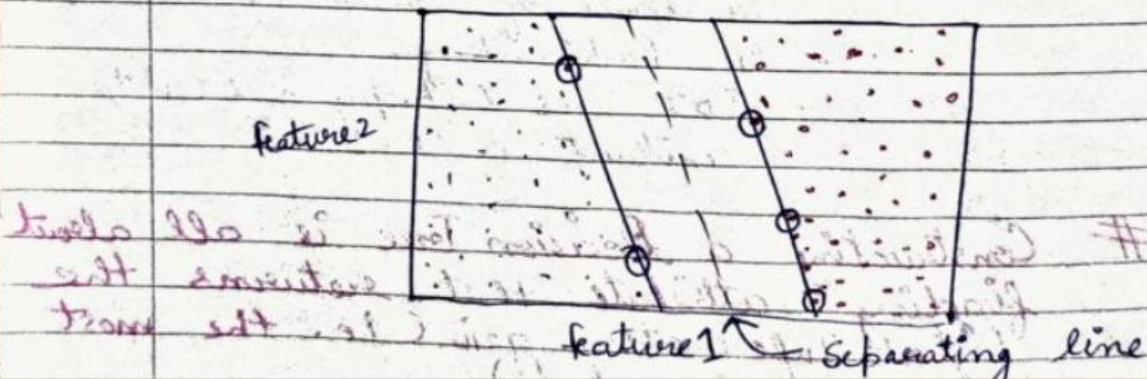
It is designed for an effective elimination of the image noise within digital images what is an essential step in applications like edge detection or image segmentation. The approach presented here tries to overcome some of the disadvantages of existing smoothing filters and is conceived as an extension of the edge-preserving Maximum Homogeneity Neighbour Filter. The algorithm cleans up the image noise in the homogeneous areas, but preserves all image structures like edges or corners. It is shown that the new filter algorithm combines the advantageous features of different types of filters. The algorithm is not only applicable to grayscale images, but can be extended to multi-channel data, like color images too. The performance of the algorithm is achieved by a more complex and differentiating treatment of the image data compared to conventional concepts.

SVM:

These are used for classification and regression problems.

Support Vector Machines (SVM)

- SVMs are supervised learning models with associated learning algorithms that analyze data and recognize patterns, used for classification / regression analysis.
- Given a set of training examples, each marked for belonging to one of two categories, a SVM training algorithm builds a model that assigns new examples into one category or the other, making it a non-probabilistic binary linear classifier.
- While selecting the dividing line, what we like to do is choose a hyperplane that maximizes the margin between the classes.



Proposed Work Flow description

- **Input image:** Input image is Textile defect images.
- **Input Gray scale/ biniraization:** Input image has to be converted to 8-bit gray scale value is calculated. And after that Gray scale is converted into binary image by thresholding method.
- **Noise reduction:** We have used median filtering, gaussian technique to reduce the noise. We have used 3 x 3 masks to get eight neighbors of a pixel and their corresponding gray value.
- **Localization:** Hence we have to detect the edges of the rectangular plate . MATLAB toolbox function provides a function called region props. It measures a set of properties for each labeled region in the matrix. We used bounding box to measure the properties of the image region. After labeling the connected components, the region will be extracting from the input image.
- **Segmentation:** We get individual character and number image by using, vertical and horizontal scanning method and To segment the Affected region based on ACM method.
- **Classification :** To trained the Dataset based on Feature extraction and Label Based on our results, controlling the trade-off between accuracy and training speed.

ADVANTAGES OF THE PROJECT:

- High accuracy
- No assumptions about the functional form of the transformation
- Less overfitting
- Robust to noise.