

**Documentation on**  
**Live Demonstration**

**Topic :Face Recognition  
using MatLab-Live  
Demonstration**

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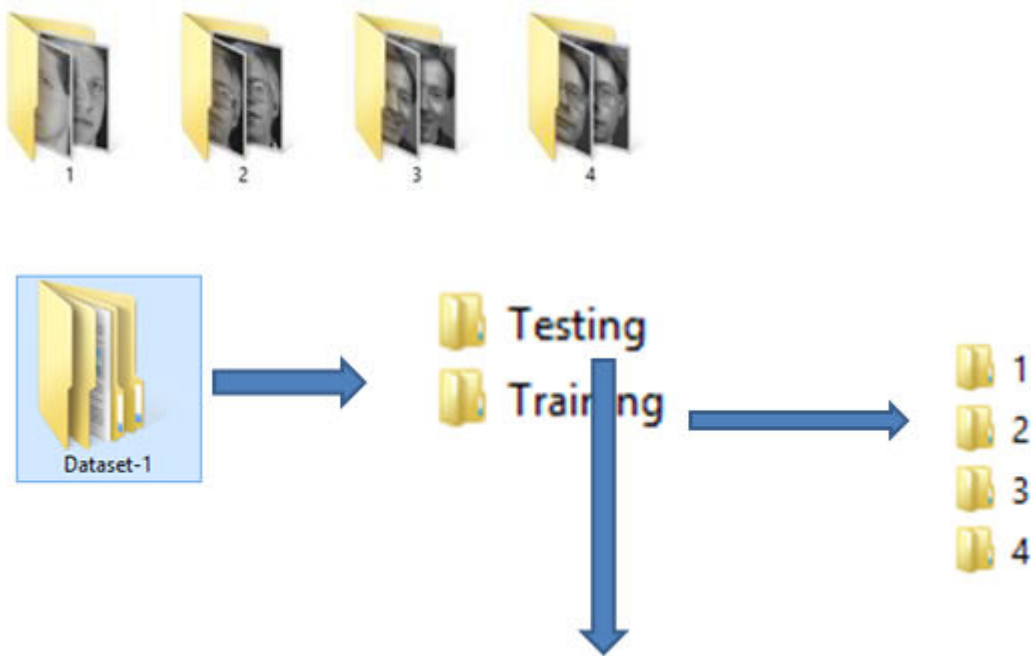
Department of Electronics and Communication Engineering



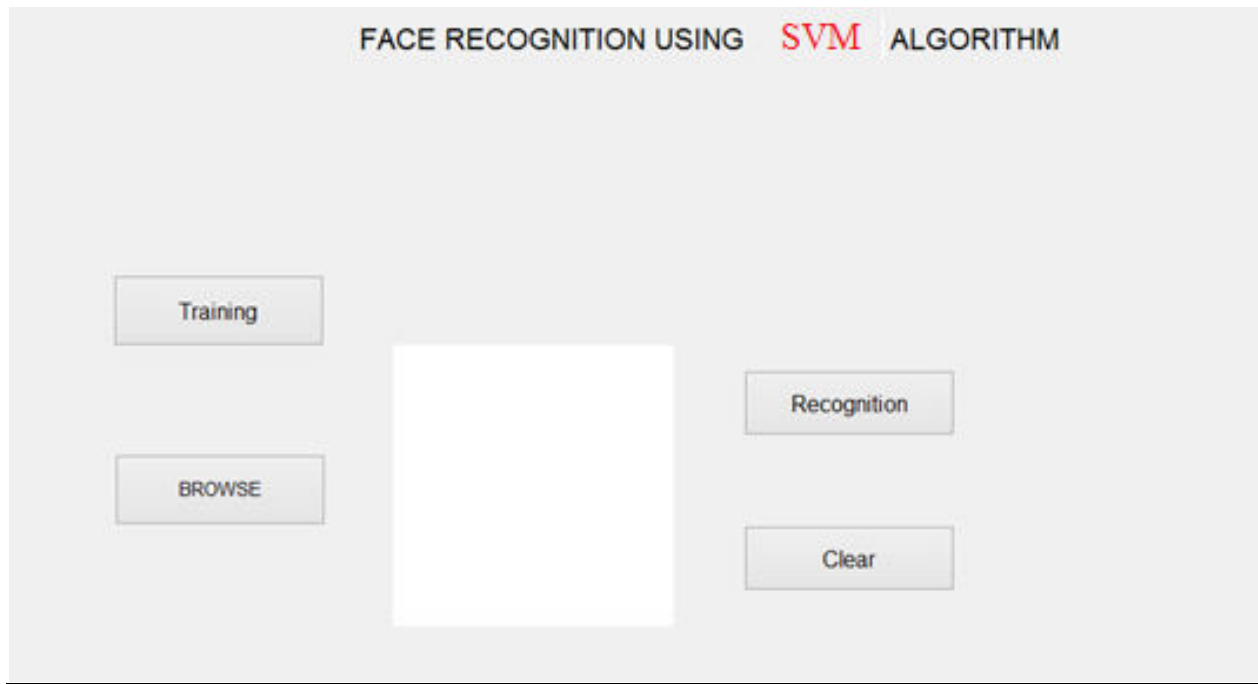
## Data Base

Face recognition is a method of identifying or verifying the identity of an individual using their face. Face recognition systems can be used to identify people in photos, video, or in real-time. Law enforcement may also use mobile devices to identify people during police stops. But face recognition data can be prone to error, which can implicate people for crimes they haven't committed. Facial recognition software is particularly bad at recognizing African Americans and other ethnic minorities, women, and young people, often misidentifying or failing to identify them, disparately impacting certain groups.

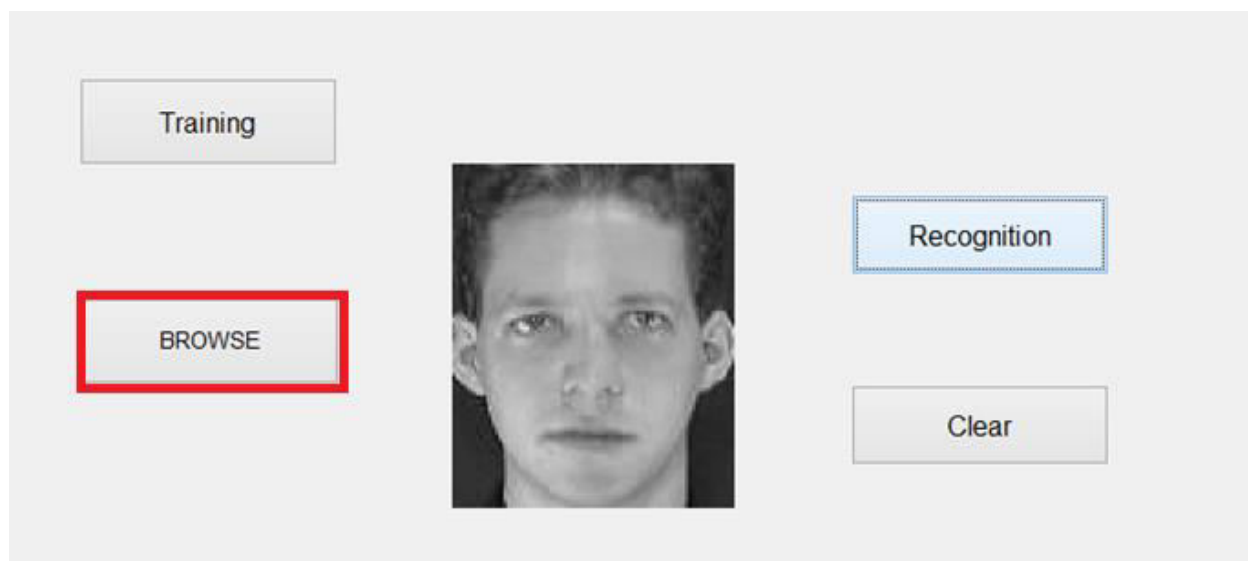
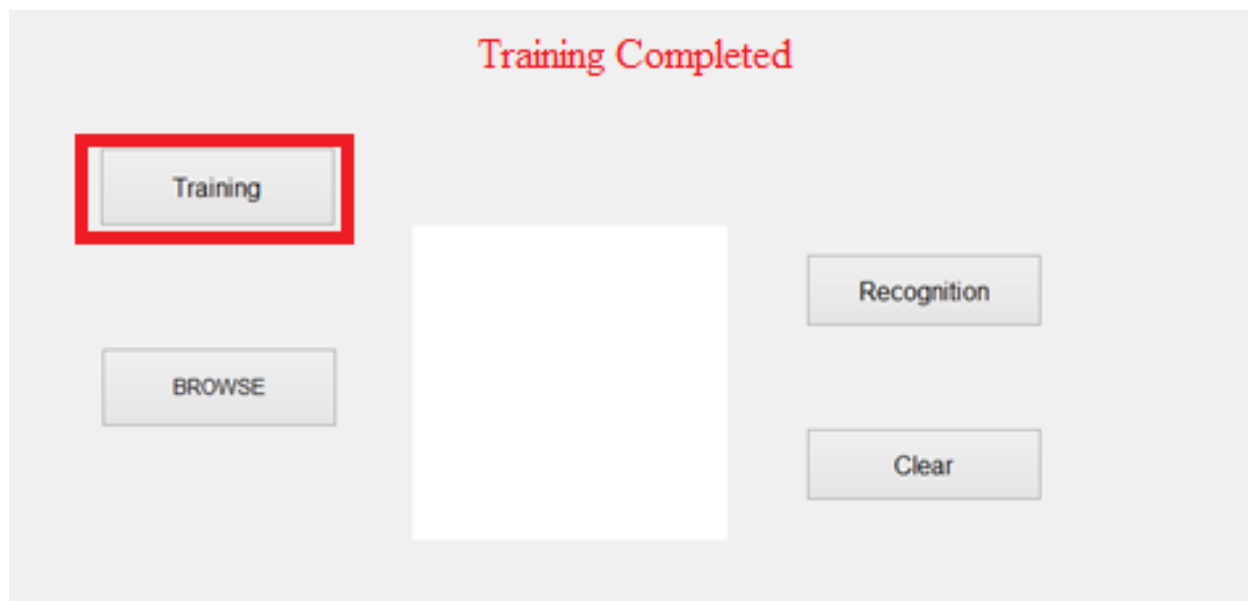
Face Images of four persons are considered. In each class 07 images are used for training and 2 images are used for testing.



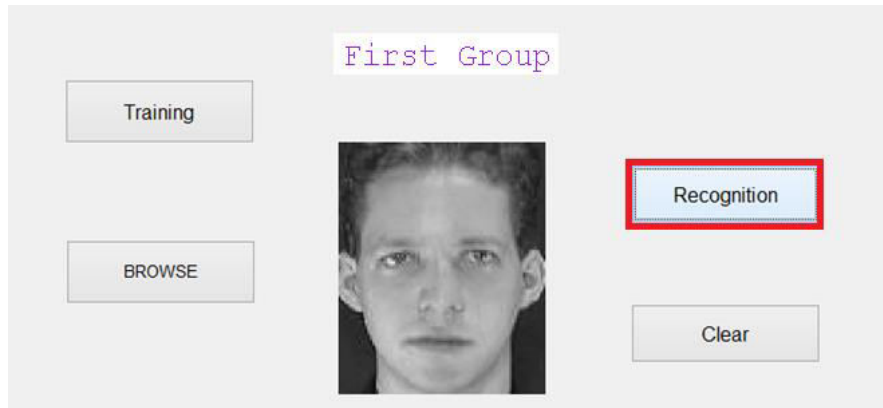
## Graphical User Interface



## Graphical User Interface



# Face Recognition Problem



## SVM model developed for training

During training 28 images mean, Variance and STD values are computed in matlab. Based on the values SVM model developed is given below:

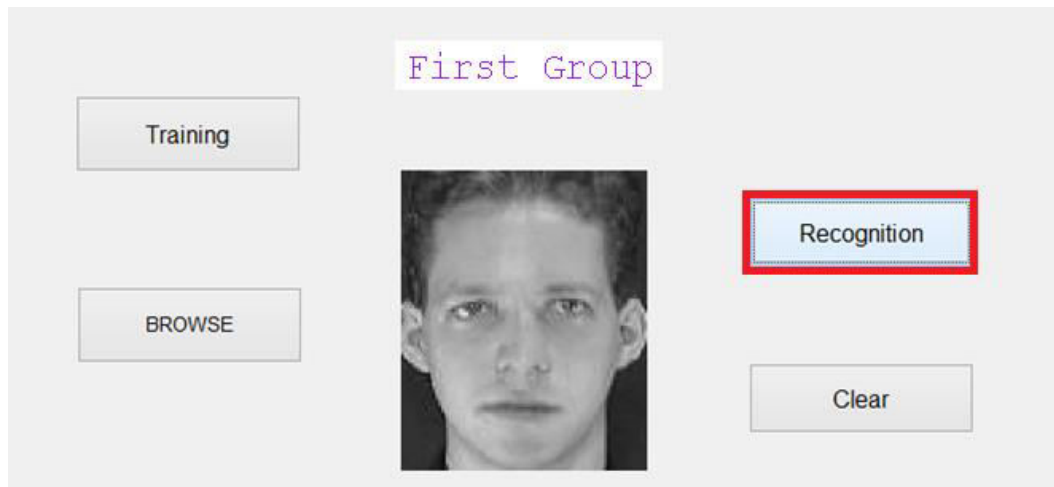
```
clc
clear all
name = '.jpg';
xx = 1;
    for ii = 1:4
        vv = num2str(ii);
        cd(vv);
        for jj = 1:5
            filedata = strcat(num2str(jj),name);
            img = imread(filedata);
            img = double(img);
            imgmean = mean2(img);
            imgvar = var(img(:));
            imgstd = std2(img);
            imgfinal = [imgmean imgvar imgstd];
            finalfeature(xx,:) = imgfinal;
            xx= xx+1;
        end
        cd('..');
    end
handles.finalfeature = finalfeature;

for Nv = 1:20
    remind1 = floor(Nv/5);
    if Nv <= 5
        Y(Nv,:) = {'First Group'};
    elseif Nv>= 6 && Nv <= 10
        Y(Nv,:) = {'Second Group'};
    elseif Nv>= 11 && Nv <= 15
        Y(Nv,:) = {'Third Group'};
    elseif Nv>= 16 && Nv <= 20
        Y(Nv,:) = {'Fourth Group'};
    end

X = finalfeature;
Mdl = fitcecoc(X,Y);
Mdl.ClassNames;
CodingMat = Mdl.CodingMatrix;
Mdl.BinaryLearners{1}; % The first binary learner
Mdl.BinaryLearners{1}.SupportVectors; % Support vector indices
isLoss = resubLoss(Mdl);
```

## SVM model developed for testing

```
Label = predict(Mdl,qimgfinal);  
msgbox(Label);
```



**Clear Goals of this work:**

1. To give depth in knowledge on SVM
2. To give hands on exposure on Matlab
3. To expose to Face recognition applications

**For any queries/feedback kindly contact**

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