Data Collection:

clc

clear all

close all

warning off; cao=webcam;

faceDetector=vision.CascadeObjectDetector;

c=150; temp=0;

while true

e=cao.snapshot;

bboxes =step(faceDetector,e);

if(sum(sum(bboxes))~=0)

if(temp>=c)

break;

else es=imcrop(e,bboxes(1,:));

es=imresize(es,[227 227]);

filename=strcat(num2str(temp),'.bmp');

imwrite(es,filename);

temp=temp+1;

imshow(es);

drawnow;

end

else

imshow(e);

drawnow;

end

end

Training model:

Clc

clear all

close all

warning off

g=alexnet;

layers=g.Layers;

layers(23)=fullyConnectedLayer(2);

layers(25)=classificationLayer; allImages=imageDatastore('datastorage','IncludeSubfolders',true, 'LabelSource','foldernames');

opts=trainingOptions('sgdm','InitialLearnRate',0.001,'MaxEpochs',20,'MiniBatchSize',64);

myNet1=trainNetwork(allImages,layers,opts);

save myNet1;

Testing Model:

clc;

close;

clear c=webcam;

load myNet1; faceDetector=vision.CascadeObjectDetector;

while true

e=c.snapshot;

bboxes =step(faceDetector,e);

if(sum(sum(bboxes))~=0)

es=imcrop(e,bboxes(1,:));

es=imresize(es,[227 227]);

label=classify(myNet1,es);

image(e);

title(char(label));

drawnow;

else

image(e);

title('No Face Detected');

end

end