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CMPSC 497  
HW #6: AlexNet MATLAB Demo  
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Objective: Implement AlexNet with MATLAB to analyze and identify five objects, including one failure.

Materials: MATLAB with AlexNet, built-in webcam, five objects to identify.

Test Cases:

1. Water bottle – Success  
   
2. Flower – Fail  
   
3. Lemon – Success  
   
4. Banana – Success  
   
5. Apple – success  
   

Conclusion:

The code was not that hard to put together and it was really cool seeing the program recognize the objects I held up. I did realize I needed to hold up simpler objects. I held up my purse and it couldn’t detect what it was. I also held up flowers and it thought it was broccoli, which I added as test case number 2 above. I was very impressed when it detected the apple as a granny smith. Unfortunately, it’s a honey crisp apple, but I felt I could still consider it a success as it is still an apple. I think this happened because the apple was pretty green.

MATLAB Script:

% load pretrained alexnet model

net = alexnet;

% set up webcam

cam = webcam;

% loop to continuously capture images

for i = 1:10

% capture image

img = snapshot(cam);

% preprocess image for alexnet (227x227x3)

img\_resized = imresize(img, [227, 227])

% classify image

label = classify(net, img\_resized);

% display image and prediction

figure(1);

imshow(img\_resized);

title(['Predicted Label: ', char(label)]);

drawnow;

end

% clear cam;