ELL784: ASSIGNMENT 1 Report

(BACKGROUND SUBTRACTION)

1. Parameters:
1. Learning rate (alpha):
2. % of gaussians to be in background(B):
3. For non-matching pixels:
    a. Updated weights
    b. Updated variance
        For least probable gaussians.

2. Experimentation:

Cases	Learning rate (alpha):	% of gaussians to be in background(B):
1	0.01	0.3
2	0.1	0.3
3	0.01	0.75
4	0.1	0.75

3. Observations:
- Case 1: Less adaptive model i.e. static objects are taking longer duration to come into background model with good boundary observed between moving objects and static objects.

- Case 2: Good adaptiveness of the model, approximate unimodal background is obtained with a good boundary observed between moving objects and static objects.

- Case 3: Less adaptive model with noisy boundary where only outline of the moving object is part of foreground.

- Case 4: Better adaptiveness of the model with noisy boundary where most of the moving object becomes part of background.

4. Inference:

- Impact of Learning rate:
  Having a small learning rate results to a good background model as the model parameters will update at a lesser rate. Hence, influence of the new incoming data is minimized. Therefore, a good foreground model will be obtained.

- Impact of B:
  Having a high B will result in noisy foreground model as most of the moving object will become part of background model.