Project 1
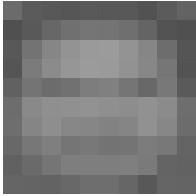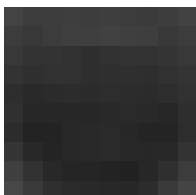
ECE 763

Computer Vision

Nishanth Vimalesh

(200266367)

MODEL 1:

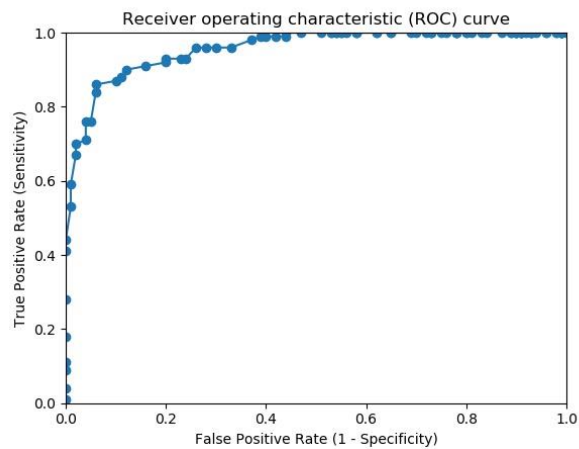### Single Gaussian Model

1) Mean and Covariance matrix for face and non-face:

	Non-face	Face
Mean		
Covariance		

2) Evaluations:

- **False Positive Rate:** 0.17
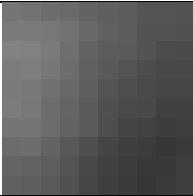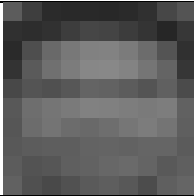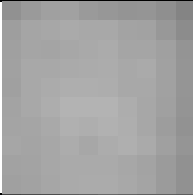- **False Negative Rate:** 0.08
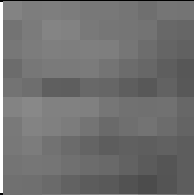- **Misclassification Rate:** 0.125
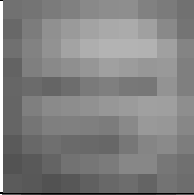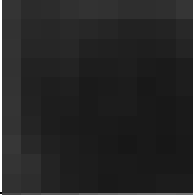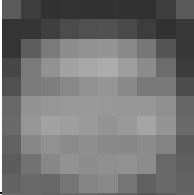
3) ROC Curve

MODEL 2:

Mixture of Gaussian Model

1) Mean and Covariance matrix for face and non-face:

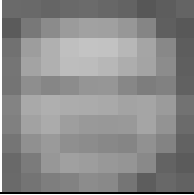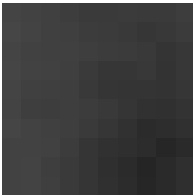| Parameter	K	Non-face	Face
Mean	1		
	2		
	3		
	4		
	5		
Covariance	1		

	2						
	3						
	4						
	5						

2) Evaluations:

- **False Positive Rate:** 0.24
- **False Negative Rate:** 0.28
- **Misclassification Rate:** 0.26

3) ROC Curve
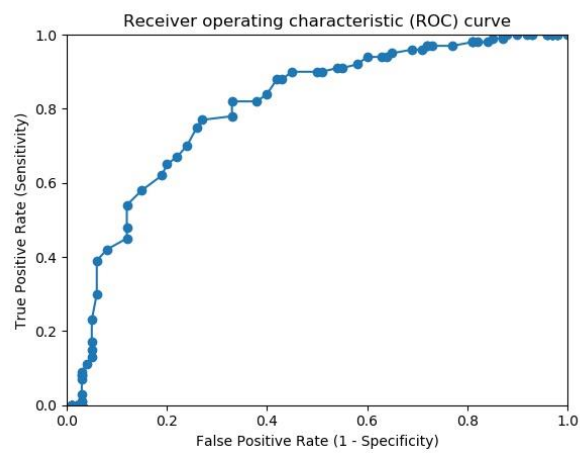
MODEL 3:

T-DISTRIBUTION MODEL

1) **Mean and Covariance matrix for face and non-face:**

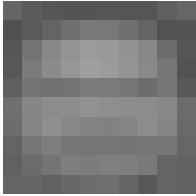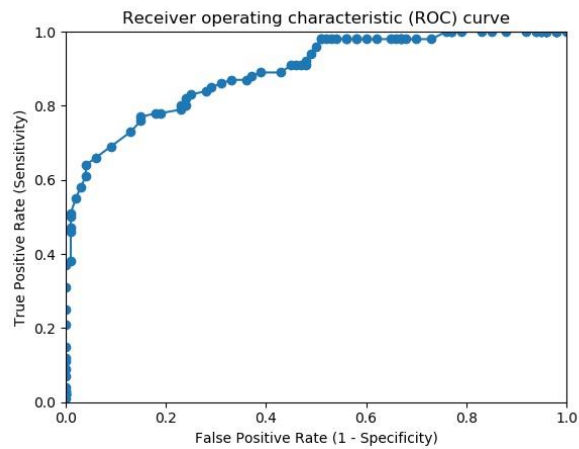|	Non-face	Face
Mean		
Covariance		

2) **Evaluations**:

- **False Positive Rate:** 0.2
- **False Negative Rate:** 0.21
- **Misclassification Rate:** 0.205

3) **ROC Curve**

MODEL 4:

FACTOR ANALYZER MODEL

1) Mean and Covariance matrix for face and non-face:

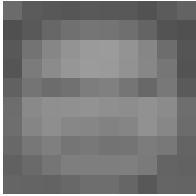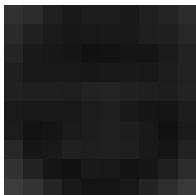|	Non-face	Face
Mean		
Covariance		

2) Evaluations:

- **False Positive Rate:** 0.1
- **False Negative Rate:** 0.09
- **Misclassification Rate**: 0.095

3) ROC Curve