UNLV
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CPE407/ECG607: Biometrics

Spring 2008, 3 credits: Test 3

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PROBLEM 1 : (5 points) What do the following terms mean in a biometric database: (a) Sheep, (b) Goats, (c) Lambs, (d) Wolves, and (e) Chameleons?

PROBLEM 2 : (5 points) Compute $Prob(d_i|O)$, the likelihood of subject d_i given the biometric data O collected at enrollment time, when $Prob(O|d_i) = 0.3$, the prior probability that subject d_i is present is 0.25, and the prior probability that observation O will occur is 0.75.

PROBLEM 3 : (5 points) If the database size at time $t = 5$ is $10,000$, then compute the match throughput at that time.

PROBLEM 4 : (4 points) What are the FRR and FAR rates for the AND and OR Boolean combinations for biometric integration methods when two biometrics are used as inputs?

PROBLEM 5 : (6 points) Given the match score for biometric a as $s_a = 12$, biometric b as $s_b = 22$, when the variance for a is $\sigma_a^2 = 4$, for b is $\sigma_b^2 = 6$, and the threshhold $T = 15$, find out if the matcher will accept or reject the sample. Show all work. Also, draw the region for acceptance and rejection on the two diemnsional graph with two scores as the two axes.

PROBLEM 6 : (5 points) Draw and label a block diagram showing the stages of authentication and enrollment system with all eleven points of attack for a generic biometric authentication system.