Haiqiang Zou

Biometric Security

Dr. Bon Sy

**Extra Credit**

Enroll Sample Function-Value

0 0 F0

0 1 F1

1 0 F2

1 1 F3

V1 > F0 > V2 > F2 > V3

V4 > F3 > F1

F1 = V5

F0 + F1 + F2 + F3 = 1

**Choosing the System**

F0 = True Accept

F1 = False Accept

F2 = False Accept

F3 = True Accept

We can set up V5 = 0. Since V5 = 0 according to the relation F1=V5, we know that F1=0.

Since we are using the False Accept system for F1, having False Accept = 0 we will also know that True Reject will be high which is good for the system. In order words people will not be able to impersonate others using F1.  
We can set V4 = 1 and F3 = 0.5 since it satisfies V4 > F3 > F1;

We can set V3=0, V2=0.02, V1=1, F0 = 0.49 and F2 = 0.01 since V1 > F0 > V2 > F2 > 0 satisfies.

**In Conclusion**

V1 = 1 F0 = 0.49

V2 = 0.02 F1 = 0

V3 = 0 F2 = 0.01

V4 = 1 F3 = 0.5

V5 = 0

This system satisfies the condition 0.49 + 0 + 0.01 + 0.5 = 1.

According to the system functions that I chose to use in this system, this system will have True Acceptances rate similar to the False Rejection rate. And it will barely have any False Acceptance rate.

Being in a system admins point of view this System is pretty decent however, under the user’s perspective this system might not be as effect because it has nearly the same amount of False Rejection Rate as the True Acceptances which means that the user has nearly 50% chance to get False Rejection when they want to verify as themselves.

Since we know that F1 = 0, we can graph this system in a three dimensional chart with F0, F2, and F3.