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Approach identification errors ^{FRR} _{FAR}
from verification errors

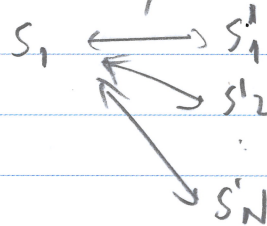
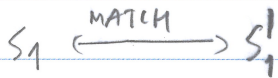
VERIFICATION

FMR/FAR



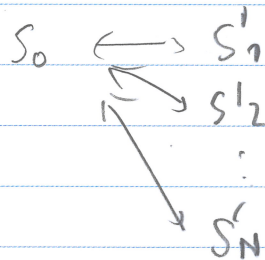
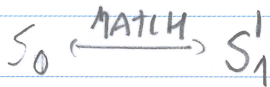
IDENTIFICATION (N)

$FMR_N/FAR_N \approx FMR/FAR$
subjects who are in the db will continue to "pop up" with the same accuracy



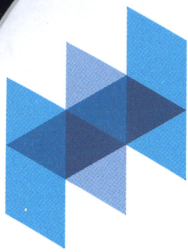
FMR/FAR

$FMR_N/FAR_N \approx N \times FMR/FAR$



increase the chance of being matched with someone from the database

therefore: do not use identification in "high security"
i.e. if priority is reducing false matches (FAR)
because false matches increase with N



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Putting identification in perspective

Example database of $N=100$ criminals

Use a system that in verification

gives $FNMR/FRR = 1\%$

$FMR/FAR = 0,001\%$

When used in identification e.g. at the airport

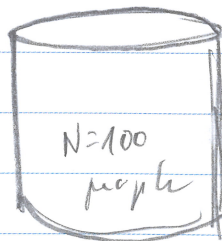
$FNMR_N/FRR_N \approx 1\% \rightarrow$ chance of 99% of finding a person from the database (i.e. a criminal)

$FMR_N/FAR_N \approx 100 \times 0,001 = 0,1\% \rightarrow$ chance of wrongly matching a non-criminal with someone from the database

e.g. if 200.000 people use an airport

$200.000 \times 0,1\% = 200$ false alarms!

input
biometrics \rightarrow



System: the person is not in the db
 $FR =$ input is in the db
system says s/he's not

$FA =$ input is not in the db
system says s/he is

False Rejection here if: input user is in the database, but the system says s/he is not (the criminal in front of the system goes away)

False Acceptance here if: input user is not in the database, but the system says s/he is (an innocent person is wrongly said to be a criminal of my database)