A: Datasheet

Algorithm: yitu_0

Developer: Shanghai Yitu Technology

Submission Date: 2018_02_12

Template size: 4136 bytes

Template time (2.5 percentile): 623 msec

Template time (median): 624 msec

Template time (97.5 percentile): 700 msec

Investigation:

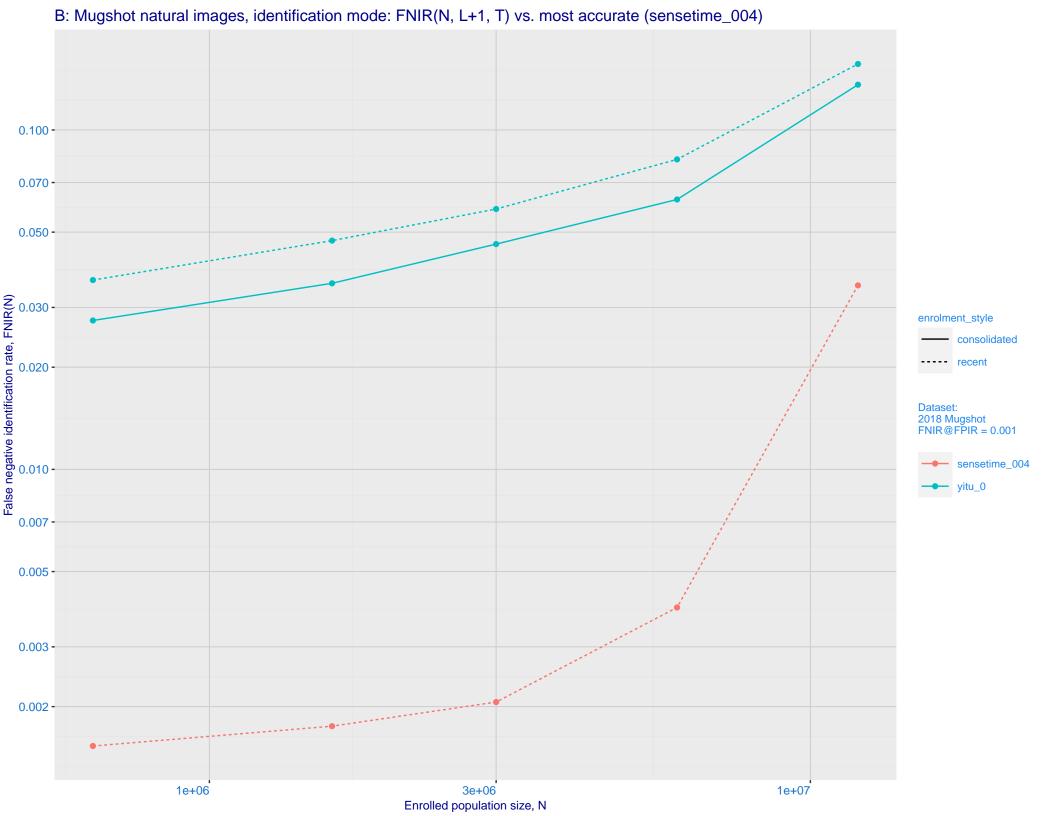
Frontal mugshot ranking 92 (out of 279) -- FNIR(1600000, 0, 1) = 0.0047 vs. lowest 0.0009 from sensetime_005

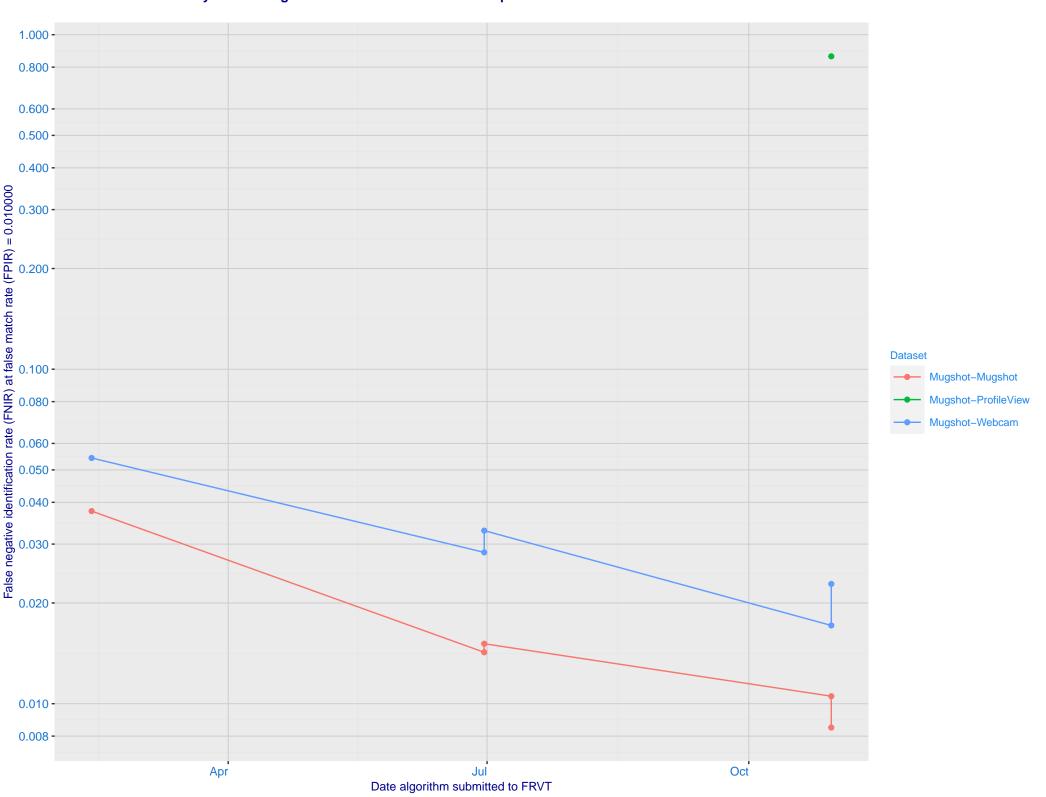
Mugshot webcam ranking 87 (out of 241) -- FNIR(1600000, 0, 1) = 0.0205 vs. lowest 0.0062 from sensetime_005

Identification:

Frontal mugshot ranking 88 (out of 279) -- FNIR(1600000, T, L+1) = 0.0472, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 61 (out of 236) -- FNIR(1600000, T, L+1) = 0.0901, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

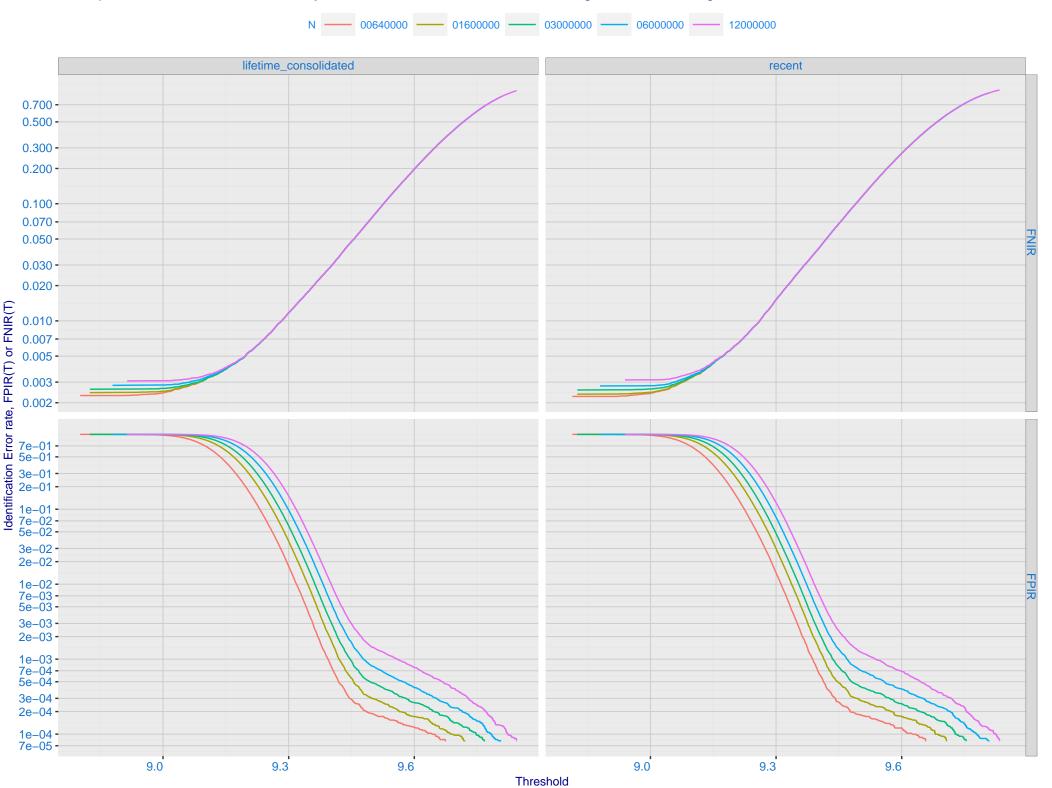




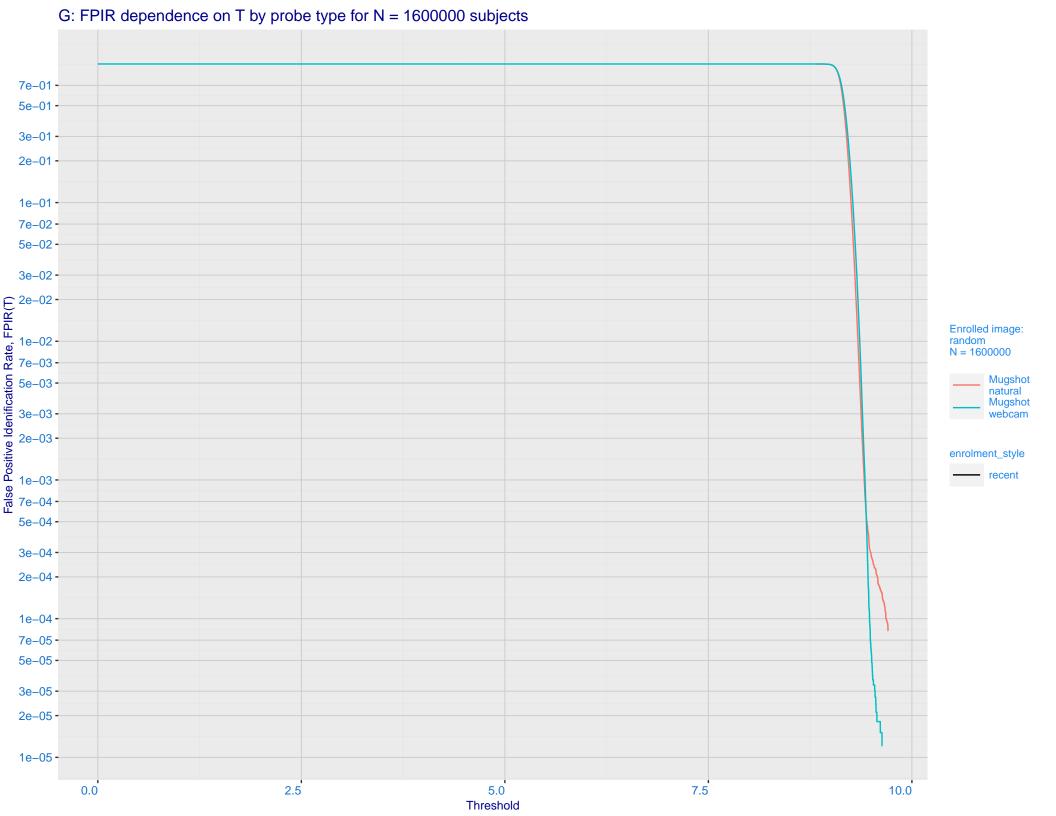
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.500 - 0.500 - 0.200 - 0.100 - 0. enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

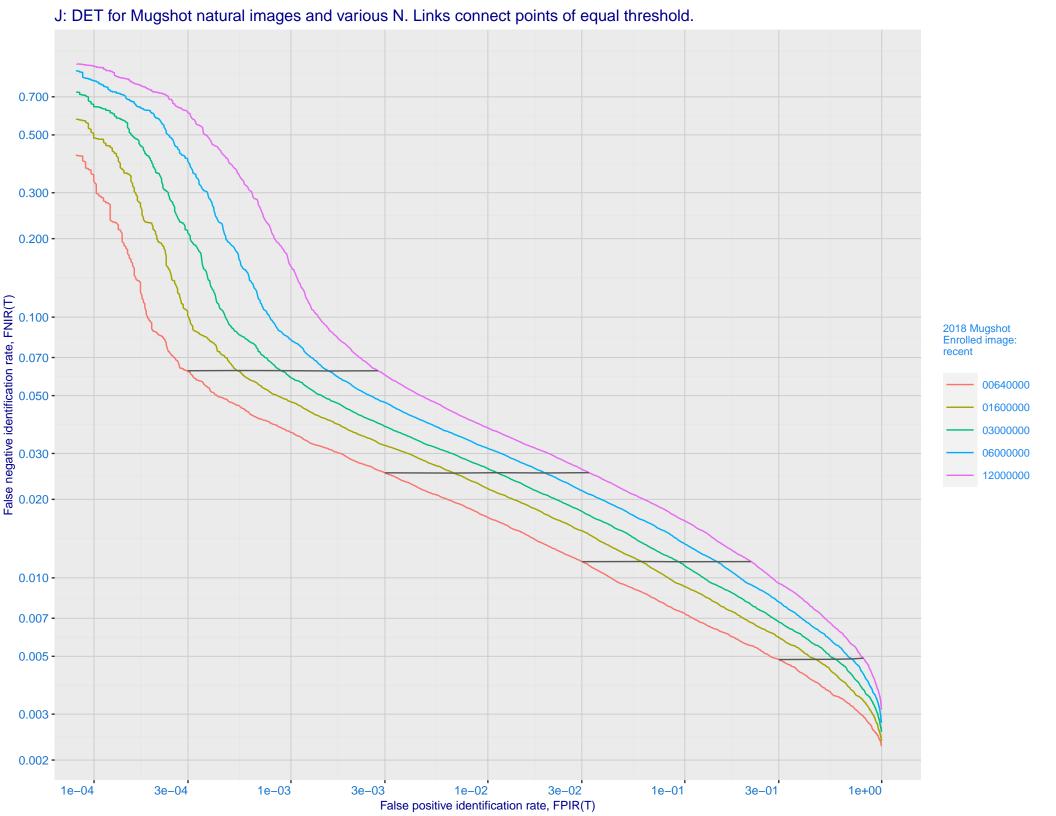
False positive identification rate, FPIR(T)

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

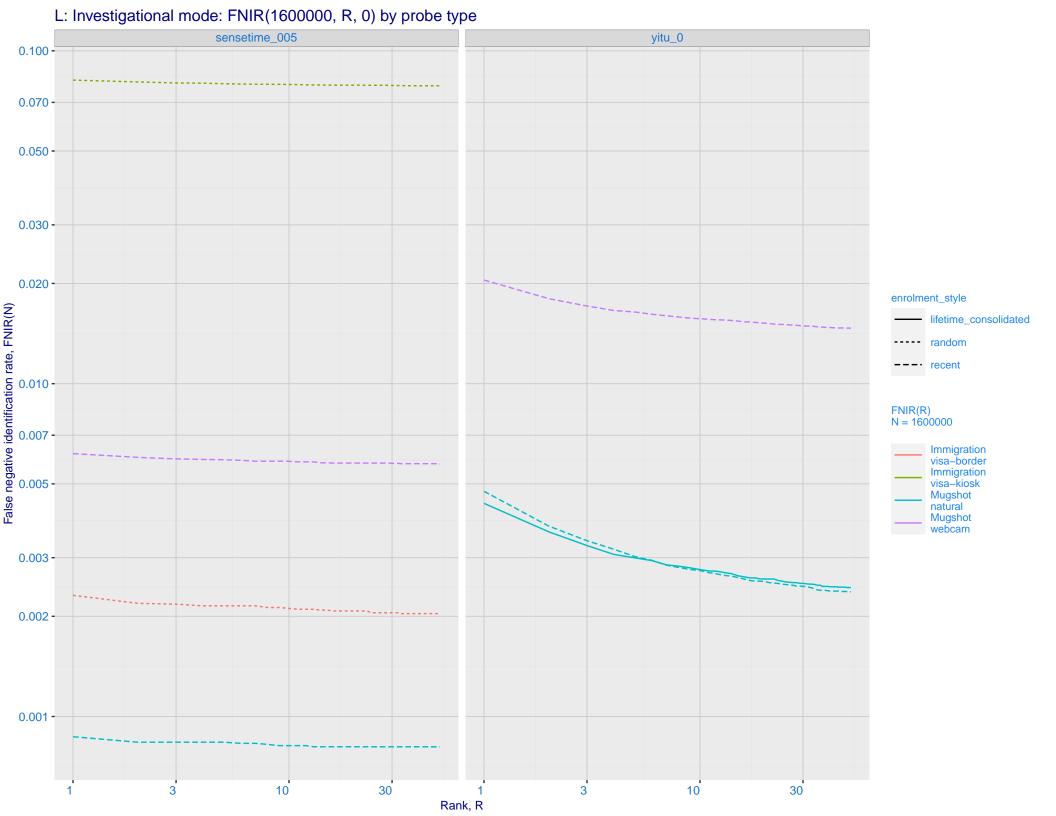


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 - 7e-02 - 7e-02 - 3e-02 - 2e-02 - 2e-02 - 7e-02 **Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -7e-05 -5e-05 -3e-05 -1e-05 3e-05 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

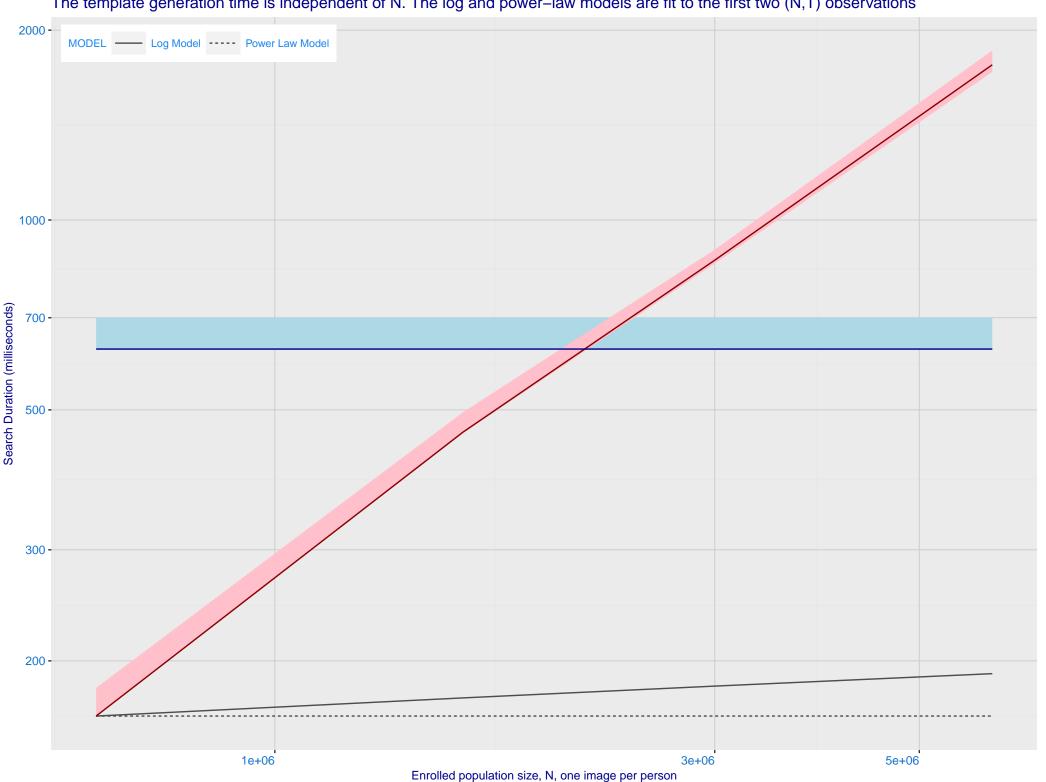




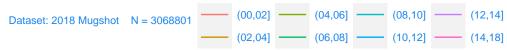
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.050 - 0.030 - 0. FNIR@Rank = 1 sensetime_005 yitu_0 Mugshot Mugshot webcam natural enrolment_style consolidated ---- random --- recent 0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -1e+06 3e+06 1e+07 1e+06 3e+06 1e+07 Enrolled population size, N

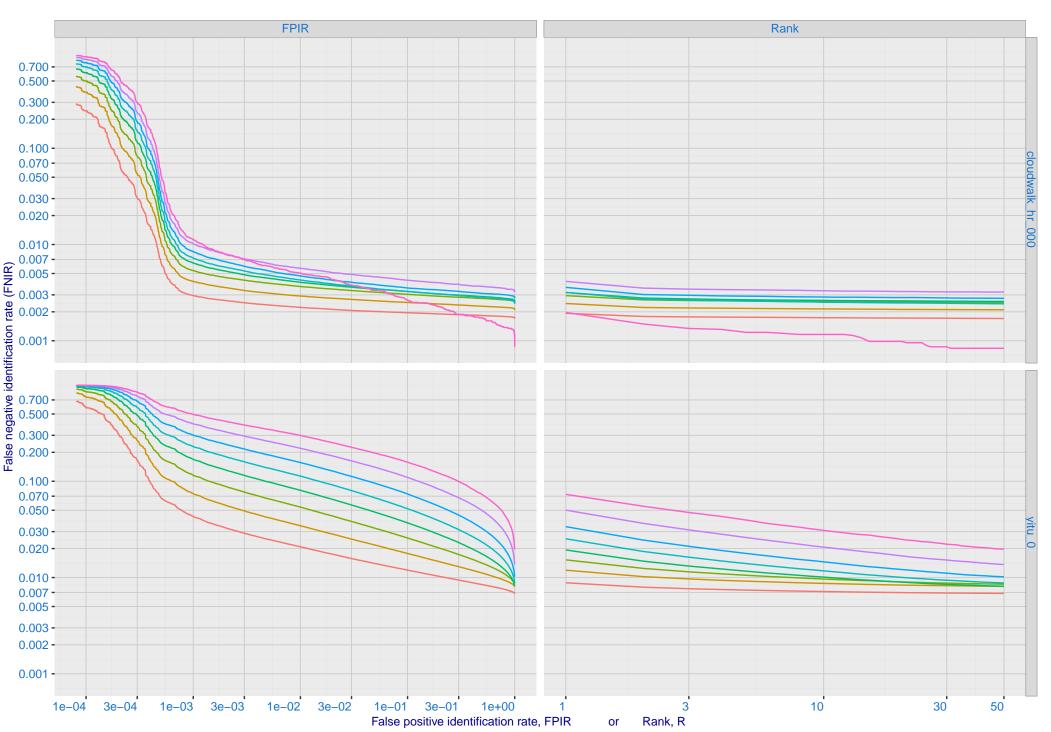


M: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations



Q: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing





R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines 10.00 -Dataset: 2018 Mugshot N= 3.1M Color encodes FNIR (Rank = 1) 9.75 -0.15 0.10 9.50 -0.05 0.00 TVAL - FPIR = 0.001 9.25 -FPIR = 0.003 FPIR = 0.010FPIR = 0.030 9.00 -(00,02](02,04](04,06](06,08](08,10](10,12](12,14](14,18]

Time lapse between search and initial encounter enrollment (years)